FLORIDA WILDLIFE®

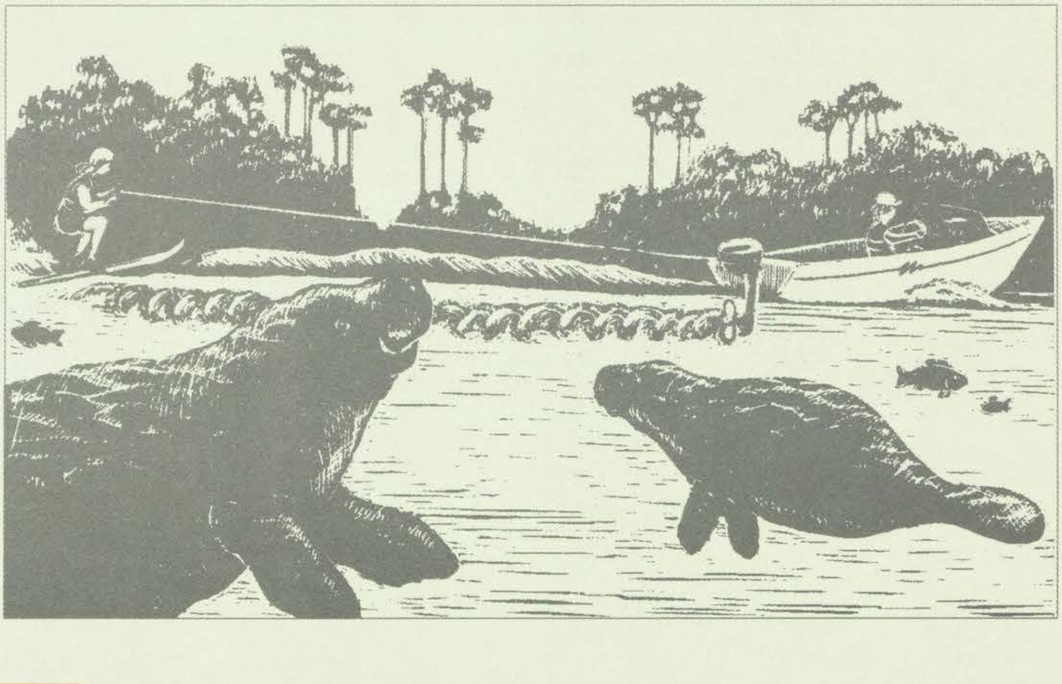
Volume 46, Number 5

September-October 1992

TRAVEL WITH AWARENESS

Road mortality accounts for 54 percent of all known Florida panther deaths since 1979. Thirty-four Key deer were killed by cars in 1990. Twenty bears in the Ocala population were killed by automobiles in one year. In 1991, 174 manatees died, 68 from human-related causes. Here are some things you can do to help wildlife when traveling:

- Pay attention to wildlife crossing signs. Reduce speed in these areas.
- Minimize nighttime driving, especially in areas frequented by the Florida panther and Key deer.
- Reduce speeds and stay alert, especially in rural areas. If you do spot an animal or its eyeshine, slow down and be prepared to yield the right of way.
- Be a responsible wildlife watcher. Stay on well-traveled roads and trails. Give animals lots of space. Watch for distress signals that might indicate that you're threatening an animal's nest or young (for example, shorebirds will circle, cry and dive at dogs or humans approaching their nests too closely). If an animal flees, do not chase after it.
- Slow down in manatee zones when boating. Boat propellers cause injuries or deaths.
- Avoid dragging your propeller through seagrass beds. These beds, critical habitat for manatees and many other marine nongame species, are easily damaged and are very slow to regenerate.



CLARK FRAZIER

WHAT HAVE YOU DONE FOR WILDLIFE LATELY?

To learn more about what you can do to help Florida's wildlife, contact the Bureau of Nongame and Endangered Species, Florida Game and Fresh Water Fish Commission.

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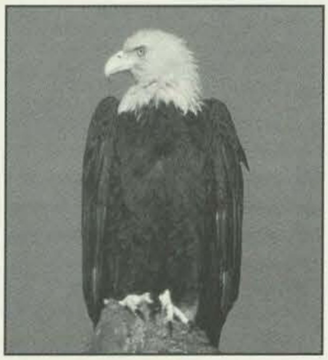

Bob Evans Jr.'s stunning shot of a bald eagle took first place in the wild birds category of our annual photo contest. Turn to page 25 to see what else earned the judges' favor.

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Covers

Jeff Ripple's red-shouldered hawk photograph, on our front cover, was just one of many outstanding entries in our photo contest. Flying squirrels, like the one photographed by William J. Weber for our back cover, are the subject of a story beginning on page 10.

Printed on recycled paper.

For Purple Martins' Majesty

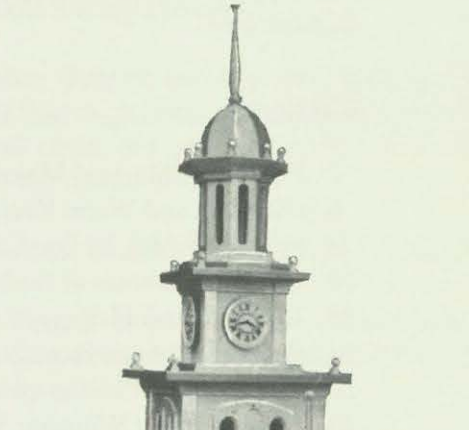
By D. Kent Fonner

Joseph Warren Jacobs had a passion for bird life. His ornithological studies at the turn of the century evolved into America's first commercial martin house business.

In order to entice birds to his residence in Waynesburg, Pa., a teen-age Jacobs experimented with various birdhouse designs, building each style in his father's blacksmith and wagon shop. To attract a colony of purple martins for observation and study, Jacobs in 1896 built and erected a majestic, 20-room house in the yard of his home, across from the Waynesburg & Washington railroad depot.

This birdhouse, which became the prototype for the company's Model #1, was intricately designed with four gables, raised window and corner trimmings and cornice molding. The whole affair was topped by a cupola that provided a distinctive appearance. The experiment was very successful, and 11 young martins were reared in the house that first year by four pairs of adults.

The colony continued to grow, so in 1898 he built a second house, a turreted Victorian mansion. The next year he added a third house, complete with a two-story clock tower and cupola, elaborately decorated with broad verandas, columns and cornices. This house was patterned after the Pennsylvania Exhibition Hall at the Chicago World's Fair in 1893, and became the prototype for the Model #3 birdhouse, later named "Independence Hall."



The "Independence Hall" birdhouse, shown above, was nearly 4 feet tall, weighed 325 pounds and had 45 rooms.

The fanciful birdhouses dotting the Jacobs' lawn became a featured attraction for Waynesburg residents, and railroad passengers and employees began requesting duplicates. Jacobs decided to start manufacturing and distributing his birdhouses commercially, and by 1908, the Jacobs Bird-House Company was in business. Jacobs converted his father's old blacksmith and buggy shop into a manufacturing plant, which soon expanded to include a number of employees.

Surely, the business was never much of a money-maker. Each birdhouse was handcrafted from oak, yellow poplar and white pine. Jacobs mixed his own paint, and customers were given a wide choice of tints, although white or white with green trim was probably the most popular.

Pricing was such that nearly everyone who wanted a birdhouse could afford something from the Jacobs Bird-House Company. The houses were sturdy, painted with three coats of paint and, with proper care, lasted many years. Moreover, they weighed several hundred pounds each, and Jacobs absorbed all shipping costs over $10. The 78-room "Capitol," the largest house, weighed 800 pounds. The "Independence Hall," with 45 rooms, weighed 325 pounds. The smallest purple martin house, the 10-room "Everybody's," had a shipping weight of

Birdhouse maker J. Warren Jacobs was an ornithologist and oologist. His collection of 12,295 bird eggs from about 500 species proved to be a valuable asset to modern ornithologists. He also painted signs, sketched birds, wrote poems and built canoes and sleds.

90 pounds. A three-year dispute over railroad shipping classification for the unusual products finally led to a 50-percent reduction in freight charges in 1912, but still one wonders if the company was ever very profitable.

Jacobs' birdhouses were sold throughout the United States, Canada and Mexico. His primary advertising medium was the various ornithological and nature journals published at the turn of the century, as well as his own publications, which were widely distributed to his customers and correspondents.

Prior to World War I, Jacobs was highly successful at promoting interest in the purple martin. Henry Ford, president of the Ford Motor Company was a steady customer and purchased 15 "Capitols," the largest model available. William Rockefeller, president of Standard Oil Company, purchased so many of the 28-room Model #5 purple martin houses that later company catalogs christened the house "Rockefeller's Favorite." Other customers included Thomas Edison and members of the Mellon and du Pont families.

A circular mailed by Jacobs to customers explaining the 10-cent charge for the annual catalog noted that "No big profit accrues to this company, and what has been earned is being used in furthering the interest in birds, and the use of bird-houses for their encouragement and protection." Corporate shareholders could not understand this philosophy. These differences between Jacobs' demand for inexpensive, quality products and his business associates' need for dividends soon drove an insurmountable wedge between them. In 1922, Jacobs was ousted as president and general manager of the company.

Without his personal vision and guidance, the corporation was an empty shell. The next year, Jacobs reorganized his efforts and continued to manufacture and sell birdhouses in competition against his old corporation, but he did it under a new name, the J. Warren Jacobs Sons Company. Although the new company demonstrated promise in the 1920s, by 1929 total receipts were only $738.38. E. Bryan Jacobs, the last surviving son of the Jacobs clan, remembered, "During the Great Depression, business...well it went to the birds."

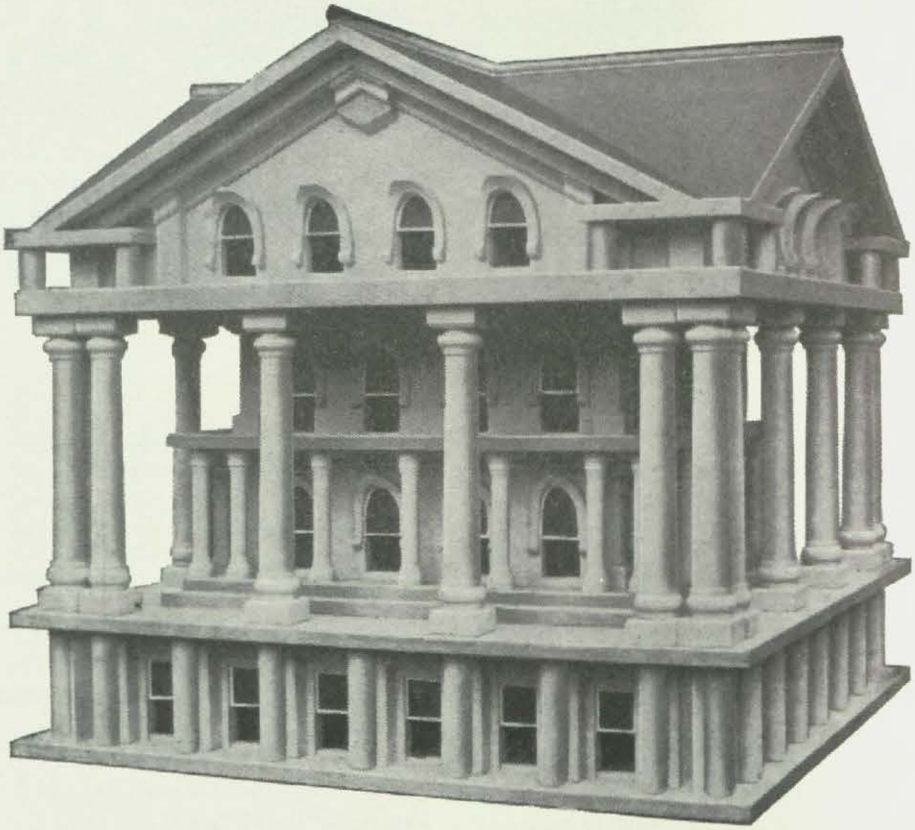
In 1940, Jacobs' sons decided to try again to restart the business, hoping the activity would revive their father's failing spirit. A new catalog was published that year, and J. Warren Jacobs Sons Company, with H. Warren Jacobs as directing manager, looked forward with hope to a new decade. The effort did revive Jacobs, and he threw himself enthusiastically into the endeavor. Several houses were manufactured and sold in 1940 and 1941, but World War II brought a halt to all production.

The last "Capitol" birdhouse, containing 104 nesting rooms for purple martins, was donated to the Greene County Historical Museum in Waynesburg, Pa., where it is now on display.

(Jacobs visited Florida several times during the 1930s and '40s. Read about one of his field trips in the Floridana column on the inside back cover.)

(This story was excerpted and edited from "Purple Martin Update," published by the Purple Martin Conservation Association, Edinboro University of Pennsylvania, Edinboro, Pa. We gratefully acknowledge their cooperation, and that of the family of J. Warren Jacobs.)

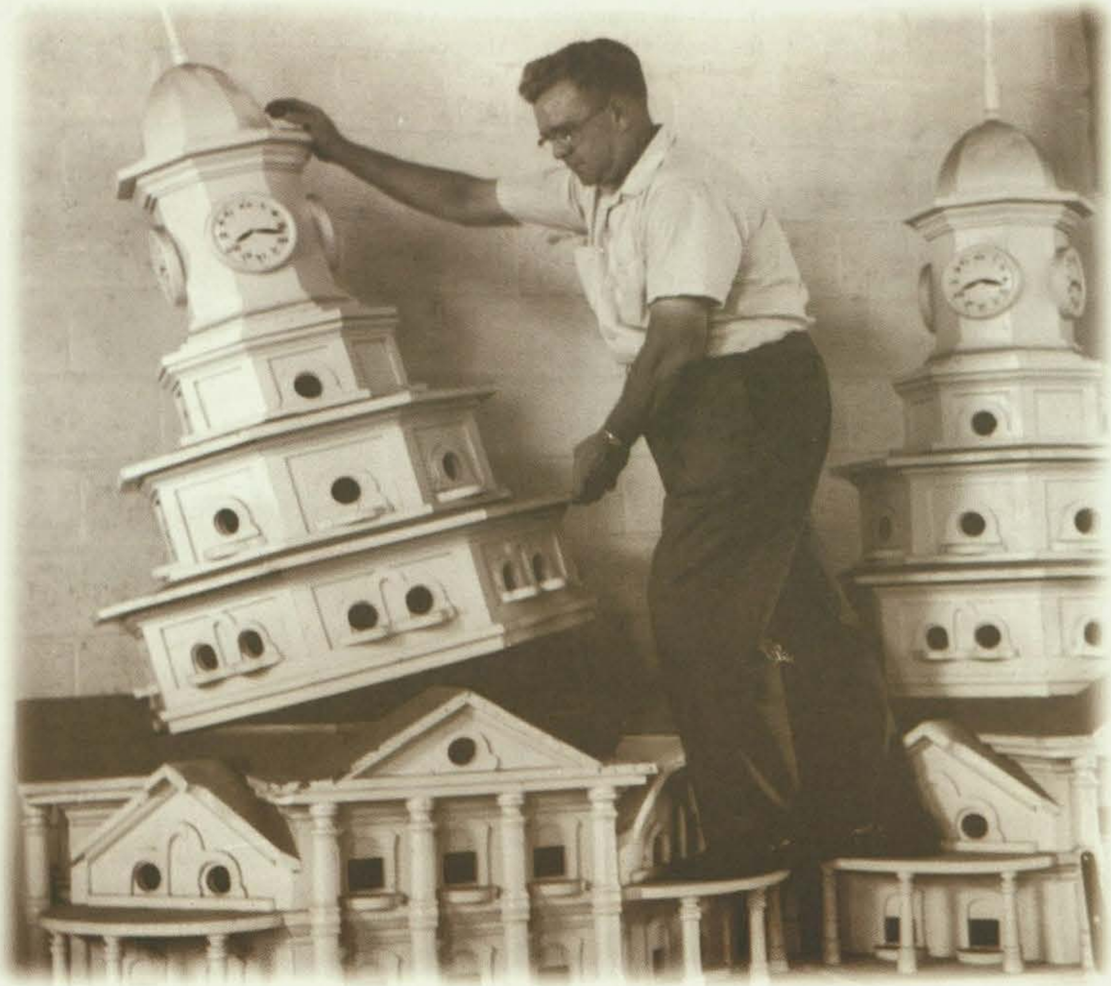
D. Kent Fonner is the grandson of J. Warren Jacobs. His mother, Helen Jacobs Fonner, is the 12th child of J. Warren Jacobs.



A 1921 catalog described the Parthenon as "the most elaborate and complete martin house ever presented to bird lovers." With hinged pole, the 60-room house sold for $130.

This 1921 catalog of the Jacobs Bird-House and Manufacturing Company featured 12 models of martn houses and two types of single-room nest boxes. Prices ranged from $1 to $125. It also offered seven varieties of feeding stations, 10 pole models and two types of sparrow traps. In addition, the catalog provided three pages of information about the purple martin, including its range, migration, feeding and nesting habits.

The Capitol, Jacobs' most expensive model, stood 7 feet tall and had 104 rooms. The only remaining Capitol known to exist is on display at the Greene County Historical Museum in Waynesburg, Pa.



Old Dogs and Warm Fires

By Lt. Dewey Weaver

The old setter lay dozing by the fireplace, an occasional twitch rippling through his body. Once, a faint moan escaped his lips. I wondered if he was dreaming of past hunts — days when his young legs would drive him through the cornfields and wiregrass woods in search of bobwhite quail.

Old dogs have always been a part of my life. They were friends and hunting companions, and it is easy to remember some of those animals that shared my outdoor adventures.

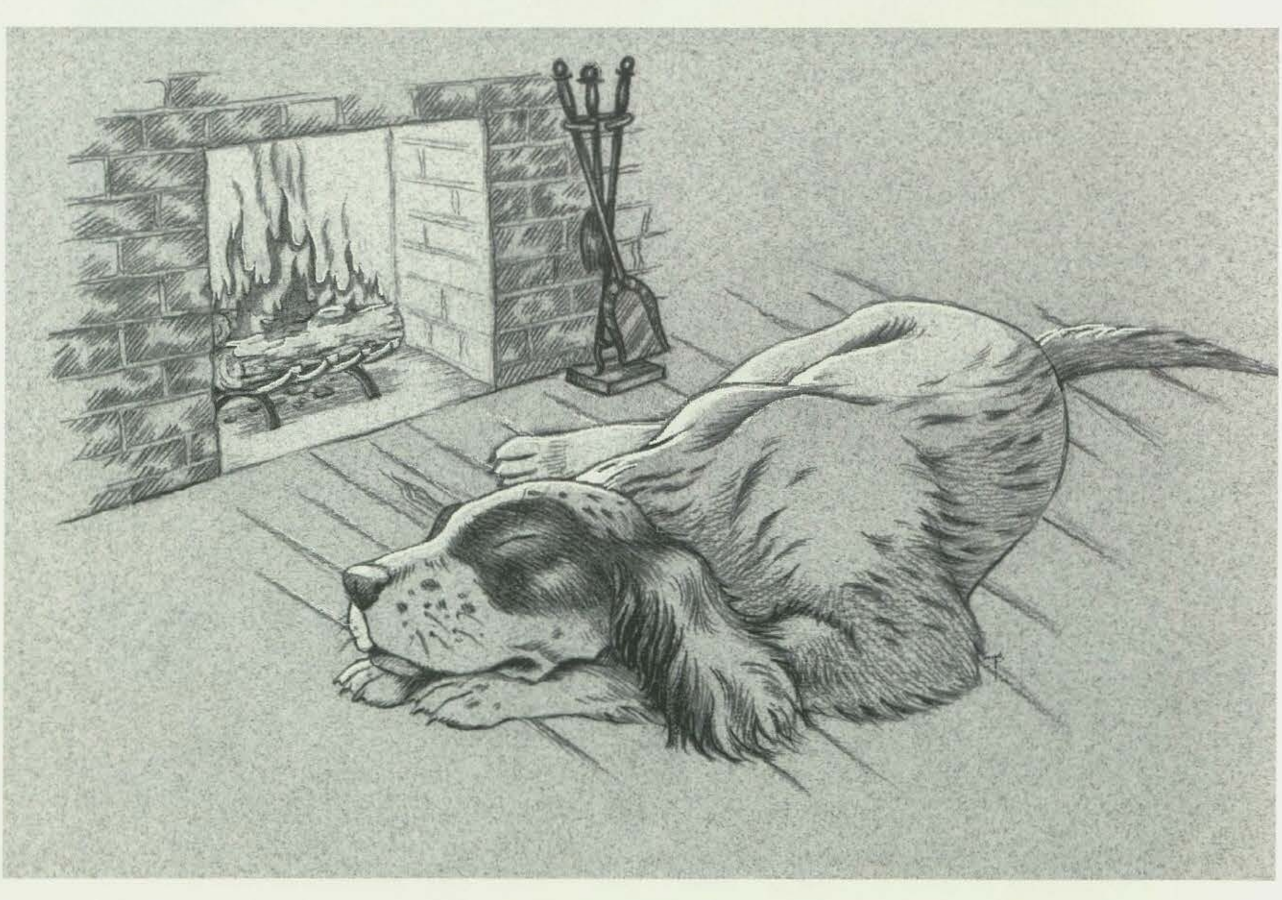
The first dogs to make a lasting impression belonged to my uncle Niles Weaver. They were a fine pair of English setters and one old English pointer. The pair's job was finding quail in the longleaf pine plantations of south Georgia. The pointer had been retired. The old gentleman also was advanced in age and no longer physically capable of farm labor. Therefore, he was my companion on many hot summer days.

My uncle and I spent hours in the swing on the big wrap-around porch of the farm house, the old dog at our feet moving only when the climbing sun pushed the shade away. Uncle Niles would tell of past hunting adventures with the pointer. The old man and dog shared those summer days until age and time took them both. Later, I would hunt over the setters. They were fine dogs, but didn't have the class of the old pointer.

My quail hunt training came at the hands of another uncle and a superb English pointer named Fanny Mae. Although the name didn't signify royalty, the dog was the queen of the woods. My uncle, Alton Hardin, lived near Williston and hunted the farm lands nearby. Fanny Mae was a hunter's dog. She pointed quail and held a rigid point, never flinching, every muscle taut. She never tired when I missed and was always willing to hunt for the few birds I did manage to down.

Fanny Mae's one weakness was that she also pointed rattlesnakes. That dog taught me not only quail hunting, but also quick moves my feet never knew before. It's quite unnerving when you expect birds to take flight but instead are greeted by the "singing of the southern belle."

Fox hunt training came from Old Jack, Rip and Sally. The trio of long-legged Walker hounds took me through the sand ridges and turkey oaks of central Florida. Winter nights with clear skies and freezing temperatures found me next



to a "lightered knot" fire, straining to hear the distant bawling of hounds in pursuit of gray fox. The starry night sky and frost forming on wiregrass made the smoky fire a welcomed source of warmth and security. This was before I-75 cut through the turkey oak habitat, and there was no distant glimmer of city lights in the night sky. The nights were totally dark except for the glowing firelight and shimmering stars.

The foxes ran until tiring, then disappeared up a live oak tree or down a gopher tortoise burrow. Many nights I wondered if the foxes enjoyed the race as much as the dogs did. They ran for hours before going down a burrow. Other nights the race would last only a short period before the fox escaped.

Rattler was one of a succession of beagles I owned during my youth. The dog's name came from the deep bawl of his voice when trailing game. The sound would rattle the woods, and he was easy to identify when chasing game through the forest.

He wasn't a classic hunter; nor was he choosy about the game he chased. He might trail rabbits, songbirds or deer all on the same day. To anyone else, he would have been a cull from the pack. To me, he was a hunting buddy. I never worried about becoming bored on a hunting trip or a walk through the citrus groves. Rattler would always run something.

As a teenager, I hunted deer in the Ocala National Forest. On one trip, Rattler wasn't in the woods but a few minutes before opening on a hot track. Other hunters from Tampa were nearby and hurriedly took up stands. The little dog's voice was full of excitement, and I almost believed he was running a deer, when a squirrel dashed across the road with Rattler in hot pursuit. We were not crowded by other hunters for the rest of the weekend.

Later, I owned another Rattler — a gift from a special lady who eventually became my wife. I named the dog Rattler because he reminded me of the first beagle in appearance and voice. This Rattler was a much better hunter, but fell short as a companion. What I remember was his friendship with Smoky, my German shepherd. The pair would play and sleep together. However, when rabbit hunting, the two were very competitive. Rattler would trail the rabbit, always in the lead, and Smoky would follow until the rabbit jumped from his hiding place. The shepherd then took the lead and barked on sight, leaving the beagle in the distance. The beagle would never give up, resuming the lead whenever the rabbit lost the shepherd.

Uncle Alton Hardin and Fanny Mae.

We walked the citrus groves of Pasco County, jumping rabbits from the brush piles of tree limbs. Occasionally, the dogs chased rabbits in the garden, but that practice came to an end when they destroyed more mustard greens than the rabbits did.

I received Jake as a gift from a friend. The English setter puppy was beautiful. He had the characteristic long hair and blocky square facial features of a setter. His white hair glistened in the sun, and the dark red spots made the white hair stand out in contrast. Jake was a man's dog. His obedience training began early. He mastered the commands of "stay," "fetch," "sit," and most importantly, "quiet." That is, he mastered them as long as *I* gave the command. The dog would not obey my wife, and this caused problems later.

I started training Jake by using pointing rags splashed with commercial quail scent. He progressed to pointing live, farm-raised quail and mastered the techniques of finding the hidden bird. The first quail hunting trip of the season was to an old, abandoned field, and Jake performed beautifully. He pointed birds, found downed birds and retrieved them for me. I was proud of this young dog. The amazing part was that all of Jake's previous training had taken place at my home, a quarter-acre lot in downtown Lake City. The dog had hunting spirit and natural ability.

His downfall came because he was strictly a man's dog. He refused to take commands from a female. I was often away overnight, and the dog would not eat or stop barking when I was gone. The neighbors tried to be understanding, but eventually the dog had to go. Things turned out best for Jake, as I found a farmer who loved the dog and hunted him often. Jake made an outstanding quail dog and convinced me of his natural ability.

I've owned three Brittany spaniels over the years: Brett, Brennie and Bridgette. These dogs taught me the pleasure of owning a versatile gun dog. Brennie was the best of the three. I could hunt quail in the morning and woodcock in the afternoon, and she never became confused about her job.

Most winter days we spent in the cornfields hunting quail. At lunch I would build a small fire to warm my toes and share a sandwich with the dog. Brennie never tired, always up to the challenge of hunting all day. She always showed class, heart and an intense desire to please me.

Long rows of houses now occupy the sand ridges, and favorite uncles have passed to greater rewards. The one thing that hasn't changed is that I still love old dogs and warm fires.

Lt. Dewey Weaver works with his dogs when not on duty as the public information director in the Commission's Northeast Region.

Solunar Tables

Show the Best Times For Fishing

By Eric Cameron

Knowing when fish are in a feeding mood can save an angler time and trouble. That's why so many fishermen around the world rely on John Alden Knight's Solunar Tables.

The handy guide lists the ideal times to fish for each day of the year, indicating two distinct "periods" of about two hours each when fish can be expected to feed most actively. The degree of action depends, of course, on other factors, including barometric pressure, temperature, winds, seasons, food supply, etc.

Each year, a new set of tables is computed for specific regions in the United States, Canada, Great Britain, Europe, Australia, New Zealand and South Africa. Many newspapers and outdoor publications print excerpts of the Solunar Tables as a service for readers.

Controversial? Far-fetched? Some have thought so. Yet, over the years countless others have become ardent fans. If you're observant, you most likely have noticed that wildlife tends to be more active at certain times of the day and night than at others. Hunters and birdwatchers are familiar with the patterns. It's the same with fish. For a long time the apparent "pattern" of feeding activity by fish had been obvious to various people, including the ancient Greeks. But, nobody devoted enough intensive research to the phenomenon to evolve a plausible explanation that might become of practical use to fishermen.

The late John Alden Knight of Montoursville, Pa. was an ardent angler who studied the situation very closely. A highly observant, methodical and patient man, Knight carefully developed an unusual theory to account for the periodic feeding activities of fish. He tested it until he was satisfied that it worked before publishing it in a few outdoor magazines in 1934. Fishing enthusiasts flooded him with letters.

For developing the Solunar Tables, John Alden Knight was elected to the Fishing Hall of Fame in 1957.

Although his Solunar Theory seemed logical to many, some skeptics dubbed it the "So-loony Theory." But Knight was undaunted. In developing his theory, he painstakingly assessed the usual factors that influence the behavior of fish: barometric pressure, winds, temperature of air and water, clouds, seasons of the year, etc. He finally concluded that all but one of the factors varied too much to be primarily responsible. The only consistent influence appeared to be the ocean tides. Tidal effect on the feeding habits of fish populations seemed logical except for one thing: few bodies of fresh water have any tides worth mentioning.

After much more research and intensive thought, Knight hit on the answer. It isn't the *tides* that fish respond to so much as the unseen forces that *create* the tidal movements of water. Because the force is universal, Knight became convinced that it is felt by fish in small ponds and streams as well as by those in the oceans. Since the tidal effect results from a combination of forces exerted by the sun and moon, Knight called his concept the Solunar Theory.

The next problem was how to apply such a theory to bodies of fresh water having no apparent tidal movements. Collecting all the data necessary to compute theoretical tides in specific bodies of fresh water, then applying his special computations, Knight made predictions about when the fish would feed most actively. When it became apparent that the feeding periods varied considerably in both intensity and duration during a 24-hour period, Knight differentiated them as major and minor solunar periods.

The feeding activity of fish can vary considerably from one day's periods to the next. For instance, on a day when other factors such as weather are negative, the feeding activity during the major solunar period might be less pronounced than during the minor period on a very good day. Many fishermen claim that, given ideal conditions, if the major solunar period corresponds to the theoretical or actual low tide for the area, and if it also occurs during early morning or late evening, the odds are in favor of excellent sport — assuming the fish are there.

During a major period, the feeding activity of the fish follows a pattern of sorts, rising to a peak, then gradually slackening as the solunar period expires. Activity during a mid-day major period during hot weather seldom lasts as long as during an evening major period, although it can be quite intensive if the fish are plentiful. Even though calculation of solunar periods is involved with the forces that cause the tides, they do not necessarily coincide with tides. But, like the tides, their timing is never precisely the same on successive days.

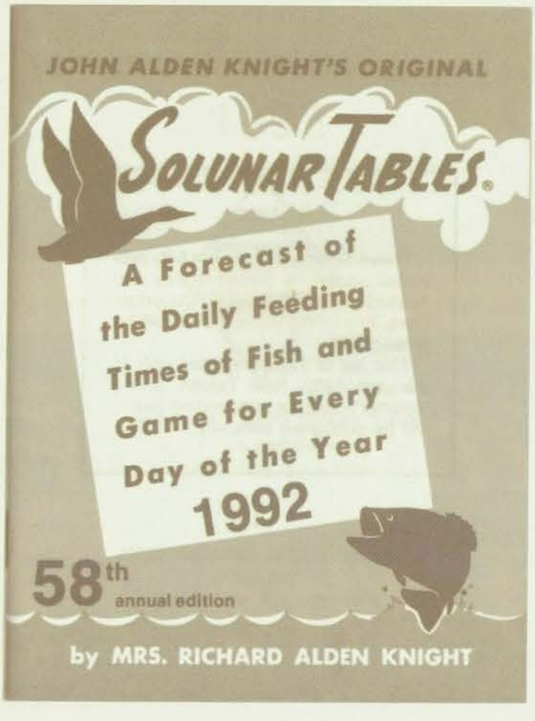
The easiest way to test the theory is to be at a fishing spot at least an hour before an indicated major period. Then observe whether the fish begin to rise or strike at about the time indicated in the table.

Following John Alden Knight's death in 1966, his work was carried on by his son, Richard, and family, who were thoroughly trained in the annual formulation of the Solunar Tables. The family enterprise expanded because of a steadily increasing worldwide demand for the publication, including contractual arrangements with publishers to reprint from the copyrighted tables. Although many similar tables are now available, Knight is credited with first publishing this fishing theory. He authored several other popular fishing books in the 1930s and '40s.

The bottom line, of course, is that you need more than a theory or a booklet of Solunar Tables to catch fish. The lures, and how and where you use them, are important factors. Nevertheless, if you're fishing in familiar waters and know that fish are there, using the tables can help you plan when to go angling.

Booklets of Solunar Tables are stocked by many tackle and sporting goods shops for a few dollars a copy. They also are available directly from Solunar Sales Company, P.O. Box 2097, Montoursville, PA 17754, (717) 368-8042.

Toronto free-lancer Eric Cameron has written for outdoor magazines, radio and television.



JOHN ALDEN KNIGHT'S ORIGINAL

SOLUNAR TABLES®

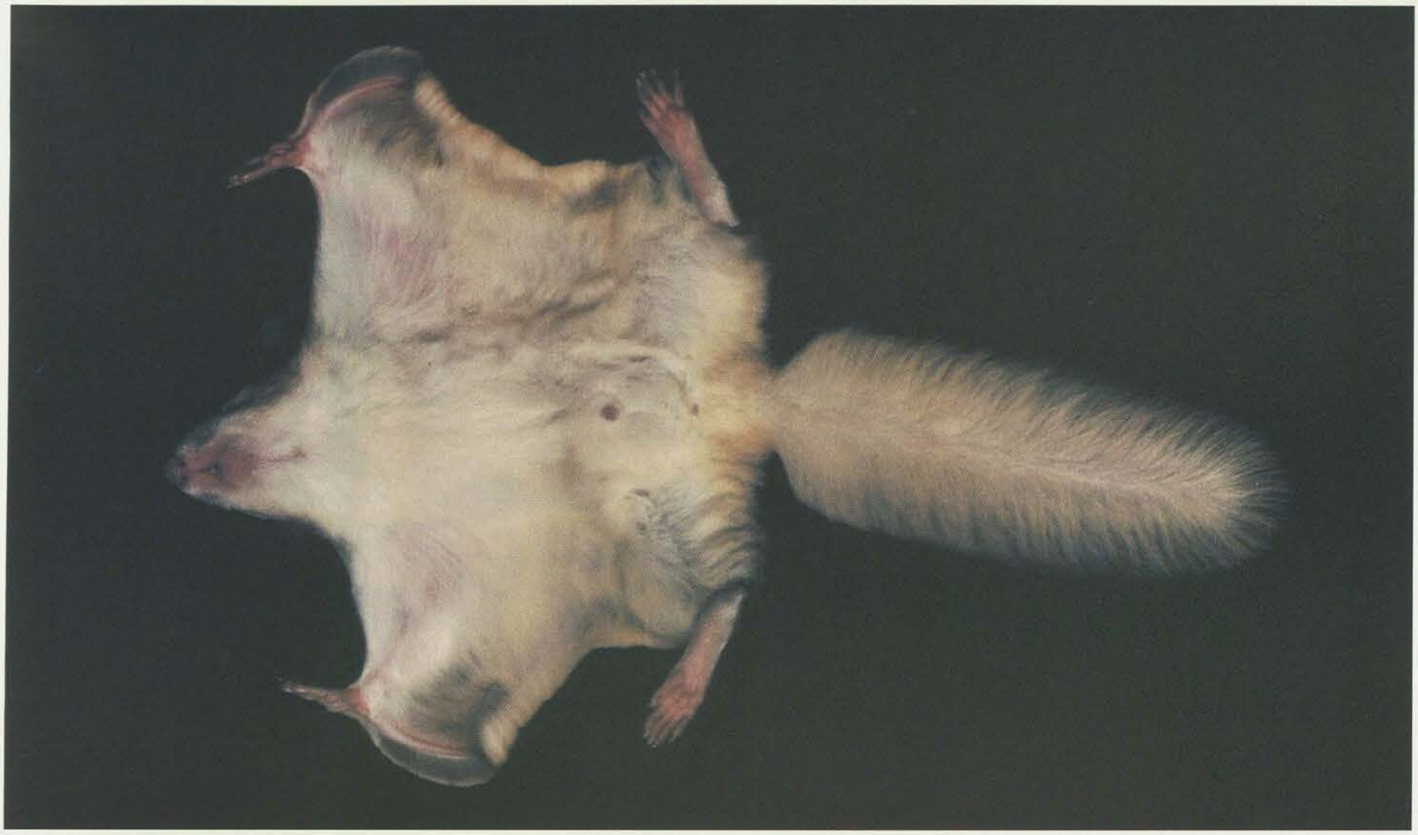
A Forecast of the Daily Feeding Times of Fish and Game for Every Day of the Year

1992

58th annual edition

by MRS. RICHARD ALDEN KNIGHT

Gliding Phantoms of the Night



PAGE 10 AND 11
JERRY GINGERICH, DVM

By Kevin Enge and Bill Kellner

> *...a little flying Squirrill, with bat like winges, which hee spreads when hee jumpes from tree to tree and does no harme.* (Thomas Morton in "New English Canaan," 1632)

Flying squirrels have one of the highest "cuddle coefficients" of any North American animal. Their small size, silky fur, feathery tail and large, black eyes make an irresistible combination. As if these characteristics aren't enchanting enough, they have an intriguing membrane of skin (patagium) that stretches between the wrist and ankle, allowing them to glide through the air as if on a magic cape.

Florida is home to the southern flying squirrel, which ranges from southern Maine to southern Florida and west to the edge of the Great Plains. Some isolated populations occur in Mexico and Central America. Ten different subspecies of southern flying squirrels have been identified. One is confined to peninsular Florida and southern Georgia, and a more widespread subspecies invades the panhandle. The northern part of its range overlaps that of its larger cousin, the northern flying squirrel, which also occurs in forests of the mountainous western United States, most of Canada and even Alaska. About 30 other species of flying squirrels are found in Europe and Asia, including one as large as 3 feet long.

The southern flying squirrel has lustrous, grayish brown fur and a creamy white underside. Gray juvenile fur becomes highlighted with chestnut brown as they mature. The sides of the belly are tinged with buff, and the edge of the gliding membrane has a black fringe. The long tail is flat and resembles a feather. When running, squirrels raise their tail like a plume over their back; when gliding, they extend it straight back to serve as a stabilizer. The southern flying squirrel is America's smallest squirrel; adults weigh only 2-4 ounces and measure 8-10 inches long, including the tail.

How They Fly

These hyper little bundles of fur usually make their appearance about one-half hour after sunset. They playfully chase each other around while emitting a variety of high-pitched sounds. Acquaintances from the same colony are greeted by "kissing," but a stranger isn't accepted until mutual sniffing of rear ends has been completed. The sniffing process is accompanied by frequent kicks by the hind feet to the sniffer's face.

Before it launches into the air, a flying squirrel usually bobs its head up and down quickly and then from side to side. It uses its hind legs to spring off a horizontal surface or from a head-down position off a vertical surface, like a tree trunk. By spreading its front and hind limbs, a squirrel stretches the flaps of skin taut and sails away through the night. Most glides cover distances of 20-60 feet, but one observer reported a glide of 100 yards down a steep hillside. These aerial acrobats have remarkable control of their flight, easily banking to avoid obstacles and even executing 90-degree turns and descending spirals.

Habitat and Habits

In Florida, the flying squirrel is most common in areas with nut-producing hardwood trees. In these areas, they ▷

usually outnumber the more conspicuous gray squirrel. Adult males usually have home ranges of six to nine acres, whereas female home ranges average about five acres. Preferred habitats in Florida are sandhills with large turkey oaks, oak scrubs, xeric (particularly live oak) and hydric hammocks, upland hardwood and mixed forests, bottomland and floodplain forests and cypress swamps. Flying squirrels usually are less abundant in forests completely dominated by pine trees. They are more common in some areas of a habitat than in other apparently identical areas. And at least in sandhills, flying squirrels are less common in recently burned areas.

Flying squirrels can't live much longer than a day without water. They have a prodigious thirst and often reside near streams or ponds. In habitats without standing water, flying squirrels obtain moisture by drinking from rain-filled pools in hollow trees, stumps and knotholes, lapping up dew and eating fruits and sap-filled wood.

Throughout most of their range, the favorite food of southern flying squirrels is hickory nuts. In the sandhills and xeric hammocks where we usually observe flying squirrels, acorns are the staple. Nuts opened by flying squirrels have a distinctive, smooth-edged, circular hole chewed in one end. They gnaw acorns open where the cap attaches. When opening a nut, a squirrel sits on its haunches with the nut clasped in its front paws. It uses its upper incisors to chip an opening, and the long, slender, lower incisors are used to scoop out the meat of the nut.

Other food items include fruit, seeds, tree buds, sap, bark and mushrooms. Captive squirrels are particularly fond of apples. Most people are surprised to learn that squirrels like meat, and flying squirrels are no exception. They will eat insects, spiders, bird eggs and nestlings, mice and even their own dead. In Florida, we sometimes find partially eaten green anoles and the remains of tufted titmice in flying squirrel nests.

In Florida, flying squirrels are not as industrious at storing food as in more northern climes, where they may cache up to 300 nuts per night. In fall, decreasing daylight triggers the food-caching instinct. You can often tell if flying squirrels are present by looking for acorns jammed into tree crotches, crevices in bark and in the rotten wood of dead trees. They use their front teeth to hammer acorns into the wood. They usually hide nuts in leaf litter, where they sniff them out later.

Nesting

Flying squirrels prefer cavities in live trees. If these are not abundant, they will use abandoned woodpecker cavities or even the hollow interiors of trunks or limbs of dead trees (snags). If you bang on a hollow tree, you may be surprised at the appearance of whiskered faces peeping out of a hole. When galvanized into action, these sprites will bail out of the hole, scurry up the trunk and flit away to another tree.

Flying squirrels sometimes share the same tree, but not the same cavity, with woodpeckers and other cavity-nesting birds. Small birds, such as tufted titmice, Carolina chickadees, bluebirds and downy woodpeckers, may be unceremoniously ousted and their eggs or nestlings eaten by the victorious squirrel. In some areas, competition for cavities makes flying squirrels a threat to the endangered red-cockaded woodpecker. Great crested flycatchers and larger woodpeckers usually are victorious in confrontations with flying squirrels.

Flying squirrels prefer cavities 15-20 feet above the ground. They will nest underground inside a hollow stump or decayed root channel on occasion. In longleaf pine sandhills with few large oak trees, they may hollow out a cavity beneath the bark of large, dead pines. Flying squirrels may construct nests on top, or more frequently inside the flooring, of abandoned gray and fox squirrel nests.

Flying squirrels sometimes use nest boxes set out for bluebirds, kestrels, bats and wood ducks. They have been reported sharing purple martin houses with a common flicker and other birds, including screech owls. Flying squirrels prefer an entrance hole 1½ to 2 inches in diameter, which is small enough to exclude gray squirrels. Nevertheless, gray squirrels sometimes enlarge entrance holes to larger cavities and evict their smaller cousins.

In the 1940s, Joseph Moore published information on flying squirrel nests in north-central Florida sandhills. Two-thirds of the 77 nests he found were "outside nests" not in tree cavities. Most of these were constructed in Spanish moss five to 20 feet above the ground in small turkey oak trees. In our recent examinations of hundreds of nests in north-central and central Florida, we found flying squirrels much more frequently inside trees than in outside nests.

We identify "bachelor pads" by their more spartan furnishings. Bachelor nests may consist of no more than a hollow in a streamer of Spanish moss or a moss-filled cavity.

Outside nests with young are more elaborate, often consisting of a 6-inch sphere of several layers of Spanish moss with a thatched roof of leaves and twigs and a lining of grandfather's beard lichens. These nests probably are cooler and safer from predators. Cavity nests with young often contain a densely packed ball of Spanish moss with a hollowed-out interior lined with dried Spanish moss, palmetto fibers or grandfather's beard lichens.

The nest is more or less continuously occupied by an individual or group during the daytime. In addition, flying squirrels maintain several secondary nests nearby. These are either unfurnished or sparsely furnished and often serve as retreats when squirrels are rousted out of their primary nest. Flying squirrels have fixed glide paths (which may require scampering up the tree trunk to attain altitude) to these secondary nests. During unfavorable weather, most of the night activity takes place there. Some of them are used as sheltered feeding stations or as defecatoria.

In warm weather, only one squirrel typically occupies a nest, except for females with young. In winter, however, flying squirrels aggregate in communal nests to keep warm. Because the fur of southern flying squirrels is sleek and lies flat to the body, it does not provide good insulation. In cold weather, bedding material is critical for insulation, and the more warm bodies, the better. We commonly find four to eight adult ▷

WILLIAM J. WEBER

WILLIAM J. WEBER

squirrels sharing a nest box or tree cavity on cold days. We have found up to 12 squirrels in a Florida nest box and 18 in a hollow tree in winter, which is less than the record of 50 squirrels from one tree cavity in Illinois.

Florida's breeding seasons are different and apparently less synchronized than farther north. The peak breeding periods in Florida seem to be August-September and January-February, but they may vary from one year to the next. And breeding periods in different colonies don't always coincide. We find newborn squirrels in all months except June and July. In years with good acorn crops, a female typically produces two, and occasionally three, litters. Forty days after breeding, two to six blind, nearly hairless pups are born in a carefully selected nursery filled with bedding. The most common fall litter size in Florida is four babies. Spring litters are usually smaller. A baby opens its eyes at the age of 4 weeks, and by 5 weeks it is eating solid food and will defend itself from an intruder. Weaning begins at 6 weeks, and young squirrels are soon able to fend for themselves. They are sexually mature by the time they are 9 months old.

A female with young will not tolerate another adult squirrel in her nest, but sometimes a few young from the previous litter may remain in the nest along with her newborn babies. A mother squirrel closely guards her babies and leaves the nest only for short periods to feed. Male squirrels will kill and eat babies, and other females will sometimes try to steal them. A mother will not hesitate to bite an intruder if she can't repel it by boxing at it with her front paws. If they must escape danger or excessive fleas, a mother squirrel will take her young to a secondary nest.

In captivity, flying squirrels may live to be 13 years old, but in the wild they seldom reach an age of 5 years. Owls are the primary avian predators of flying squirrels, because their hunting coincides with the squirrels' nighttime activity. Occasionally, flying squirrels will be caught by hawks, which hunt during the daytime. Known mammalian predators include skunks, weasels, foxes, bobcats, house cats and occasionally rat snakes.

Common But Secretive

Although flying squirrels may be common in an area, they usually go unnoticed by humans unless they get in the attic or awnings or are caught by a house cat. Many outdoorsmen, although they spend a lot of time in the woods, have never seen a flying squirrel. But once you learn to recognize their high-pitched, whistling alarm calls, the "cheeps" and chittering will tell you how common flying squirrels are in Florida. The secretive, nocturnal creature is a nongame species, and even if it wasn't, it would not be worthwhile hunting because of its small size. Large colonies of flying squirrels may do some damage to pecan and orange groves.

To observe flying squirrels, establish a feeding station baited with sunflower seeds, cracked nuts or peanut butter. Place this food on a bird feeder, on a board attached to a tree trunk or atop a wooden

KEVIN ENGE

Forty days after breeding, two to six blind, nearly naked pups are born in a carefully selected nursery filled with bedding.

post near a tree. If flying squirrels are in the area, they should discover the snack bar in a few days and include it in their regular feeding trips. Illuminating the feeding station with a red-filtered light will not disturb them. Once they become accustomed to the feeding station, they will ignore even a yard light or flashlight. Flying squirrels are most often seen and heard in fall when they are busy storing nuts.

The Commission discourages the practice of adopting wild animals as pets. History books, however, reveal several accounts of those who kept pet flying squirrels, including King James I in 1609. The colonists enjoyed keeping them, as evidenced by John Kalm writing in 1770: "Among all the squirrels in this country, [flying squirrels] are the most easily tamed. The boys carry them to school, or wherever they go, without their ever attempting to escape; if even they put their squirrel aside, it leaps upon them immediately, creeps either into their bosom, or their sleeve, or any fold of the clothes, and lies down to sleep."

In the past, ads in outdoor magazines extolled the virtues of flying squirrels as pets. Nowadays, other critters have fulfilled the need of some persons for unusual pets. Still, many hundreds are captured every year in Florida, primarily for the overseas pet trade. Florida law prohibits the capture of flying squirrels for commercial purposes.

Kevin Enge is a biologist with the Commission's Bureau of Nongame Wildlife. Bill Kellner is a naturalist in Citrus County.

Lost!

Text and Photographs by Mark H. Rapp

Somewhere in the distance, thunder rumbles. I look up at the leaden sky. Rain droplets tickle my face. It has been drizzling on and off all afternoon, a perfect day to stalk silently across rain-soaked leaves.

A malevolent cypress knee grabs me by the toe and forces me down into the mud. Cool, soft ooze swallows my hand. I raise my other hand to keep the muzzleloading rifle out of the muck. Swamp gas assaults my nose. Balancing on two knees and a hand, I watch a moccasin the size of my arm slide lazily into coffee-colored water. Ripples spread, then fade. A light drizzle dances across the surface of the slough — beautiful, almost hypnotic. Sometimes you see things from this perspective that you wouldn't notice otherwise.

Shaking my fingers to sling off the mud, I ease my way over to the water, squat cautiously and rinse off what's left. The hand goes in black and comes out dripping brown. I turn and step through cypress knees to higher ground, where raindrops patter on green, fan-shaped palmettos. Spider webs cling to my face. I whistle the rising, autumn call of a quail. Through the oaks and palmettos on my left comes an answer, not a bird, but my younger brother, Gregory. He moves toward me, zig-zagging his way through the underbrush.

"We're lost, aren't we?" Greg says.

His question confirms my own suspicions. We should have hit the road again by now. The pattering intensifies. We slip into our camo raincoats and wrap plastic bread bags around the middle of our guns to keep the powder dry. I check the compass, frown and shake my head. The needle seems to be sticking. It swings free momentarily, but north can't be that way. We agree to keep moving ahead.

Half an hour later, we emerge from the swamp onto a sandy road. Daylight's fading, and it's raining seriously now. We decide to unload our guns. The caps pop. Flames flash skyward. Blue smoke follows us up the trail. Longleaf and slash pines flank the road, their tall, straight trunks rising from a carpet of glistening palmettos. The sulfury smell of black powder smoke gives way to the crisp scent of the evergreens. Mats of pine needles, some of them more than a foot long, cover our path.

We hike a mile or two, but still no car. I'm getting tired and hungry. My torn raincoat is starting to leak on one side. Then the road dead-ends at the edge of another swamp, or maybe even the same one. It only takes a moment to sink in. We're lost, really lost, somewhere in the northern half of Florida's Osceola National Forest, just across the state line from Georgia's Okefenokee Swamp. Confusion leads to a rising sense of panic. Stay calm, I think. Remember Osceola, the leader of the Seminoles. He sustained his freedom in Florida's bewildering swamps.

I pull out my compass to take another reading. It points almost straight ahead. Turning to show my brother, I suddenly realize the compass is still pointing ahead, even though I've turned completely around. A couple of hard taps make the needle come loose. Terrific — we've been walking southwest instead of north! It's time to backtrack. [**Editor's note**: "Following the needle" is not the proper way to use a compass for orienteering. The traveler should walk toward a landmark that is on the desired

heading. See "Get Lost" in the January-February 1992 issue.]

The dull gray light of a rainy afternoon dims to an ominous darkness. The right side of my chest is drenched. A flash of lightning momentarily turns night into flickering day, then darkness again. Then the crack of thunder — like a gunshot. My stomach knots up as we finally leave the road. I have walked out of swamps after dark before, but never into one. Lightning silhouettes a tall cypress tree. Standing like some monstrous sentinel guarding the entrance to the swamp, it may live to be hundreds of years old. Another flash, and I can see the moss dangling from its branches, waving in the wind, inviting — or daring — us to enter.

Clutching our rifles, we plunge ahead. Lightning flickers all around. The wind howls through swaying bald cypresses, driving the rain down on us. We are facing nature at its worst. More lightning — and now my fear gives way to a different feeling. It has something to do with the raw, wild beauty of this primeval place, this unpredictable adventure. It's real, not the two-minute kind you have to wait in line 30 minutes for. This is challenging and vital, mysterious and exciting. I decide to enjoy it.

Water concedes to higher, open ground. Lightning illuminates freshly plowed soil. A low, dark shape scurries off into the night. I take advantage of a lull in the rain to dig out the flashlight and check our heading.

Across the clearing we approach a slough and wade it. The muck sucks at our rubber boots and almost pulls my right one off. We weave through a maze of cypress knees. More muck, more wading, and the ground begins to rise again. The brush gets thicker as we leave the water behind. Vines yank off our hats and wrap around our long rifles. Twigs and branches claw at my face. Greg almost loses his glasses. We push on and finally break into open woods. I inhale the piney air, brush against a palmetto, and get a little nervous. What if we've walked in a circle?

The pine woods make for easy going. In no time at all we reach a road. Soon I can see the car, and a strange, utterly ambivalent feeling sets in. I'm glad we made it, but now the adventure's over.

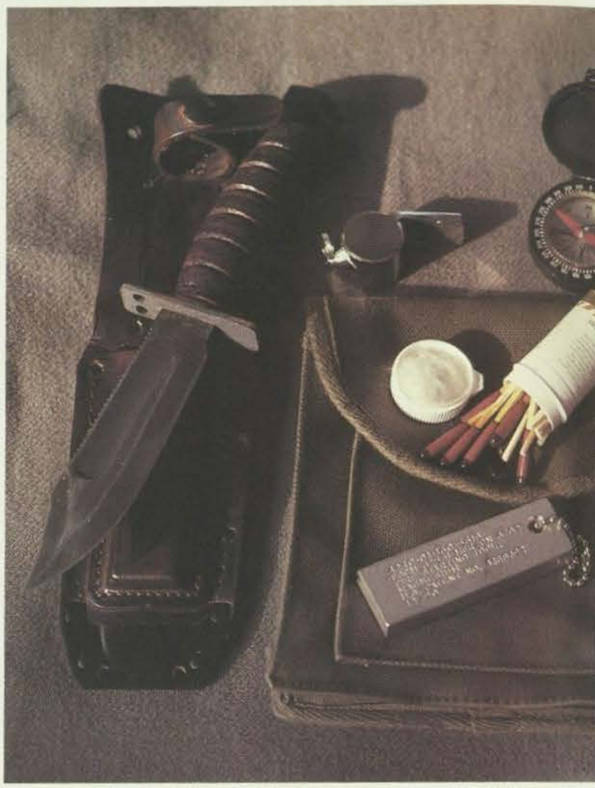
It has been a remarkable day, one that I will never forget. I learned some valuable things. While it may be nice to have goals, you must have a plan in order to reach them. It's also important to enjoy the journey, even if things get rough. Above all, however, it's imperative to have a reliable compass in the wilderness — and the skill to use it properly.

I've come to appreciate something, too, about the wilderness. We've worked hard to make everything so safe, predictable and useful. The trouble is, if you keep that up you'll end up bored and frustrated. Yet, when something destroys our sense of safety and predictability, we feel threatened. Wilderness is not always safe. It is often unpredictable and surprising. When we try to make it less threatening and more useful, we often wind up destroying it. Wilderness has become too scarce and valuable to destroy. It's a haven from boredom and frustration, a place where the word "freedom" takes on new dimensions, a place to learn important lessons.

We reach the car, unlock the doors, place our guns on the back seat and climb in out of the rain. We are safe now, in our steel cocoon — at least until we get to the highway. I vow to participate in an orienteering class as soon as possible. Knowing as little as we did about traveling at night in a swamp, we are lucky. Exhausted, I start the engine and carefully pull out onto the sandy roadway.

I may not have taken any game out of the woods, but I'm not leaving empty-handed.

Mark H. Rapp is a teacher and free-lance writer living in Keystone Heights.



Survival

Text and Photograph by Gray Bass

I can't say as ever I was lost, but I was bewildered once for three days. (Daniel Boone, c. 1818)

At the end of the trail, beyond he gallberry patch at the edge of the titi swamp, lies the deer. A trophy. Congratulations!

The last radiance from the weak, winter sun retires into the west, and the icy fingers of evening slip inside your jacket, reminding you how cold it really is. Let's get that buck out of here! But which way is the truck? Which way?! That big oak, that lightning-scarred pine, you don't remember them. You wish you had a light. You wish you knew where you parked. Blackberry vines trip and scratch your legs. You are lost. Lost! The word blares through your unbelieving mind as the trumpet of doom. Suddenly it is very dark, shockingly black, and it occurs to you that you may spend the night here. Silent, heartlessly cold stars spring into view above the pines. Panic!

Could this happen to you? Yes, but you can survive. There are only two reasons to spend an unplanned night in the woods. Either you are lost, as in this case, or you or your transportation have become disabled by an accident.

If you had been smart, you would have told someone where you were going and when to expect you back. Under that scenario you probably would be found quickly, provided you know how to help others find you.

First, don't panic. If you are truly lost, accept that fact and immediately begin to do something positive about it. Don't go wandering aimlessly, especially since you don't know where you are or where you are going. Stay put.

If you had been even smarter, you would know, at least approximately, where you are now. Then, if you had a light and a compass, you might be able to walk out. If you are injured or ill, there may be nothing you can do except wait for assistance, but you need to be able to help them find you.

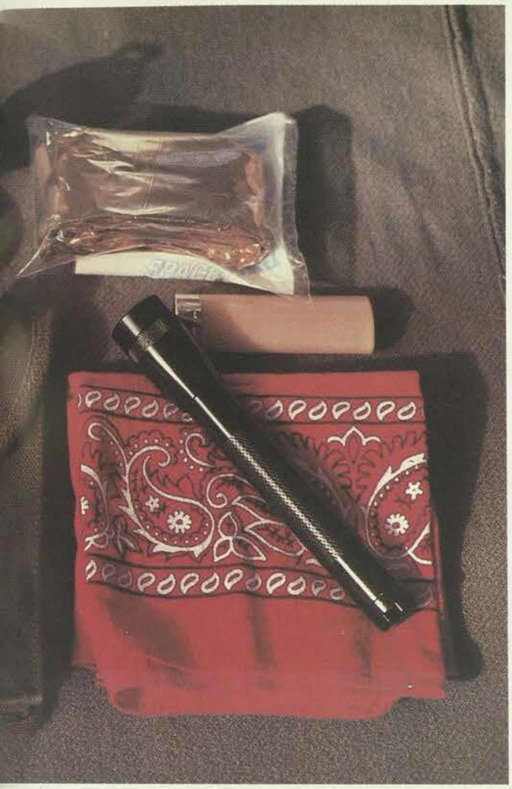
Let's say you went into the field prepared to surmount your mistakes or misfortunes. A good woodsman will carry the following items: compass, fire-starter, light, audible signal, knife and possibly other survival gear. All of these items, except the knife, fit easily into a military belt ammunition case. You can carry them in your pockets, but you will have to relocate them each time you go afield. A kit keeps essential items together and organized.

Some means of starting a fire is indispensible. You will need a fire for warmth, psychological support and to signal your location to rescuers. If you are wet, as from a boating accident, it's essential to dry your clothes as soon as possible. You may be in danger of hypothermia.

Don't underestimate the comfort of fire. Warmth, light and entertainment from fire are ancestral pleasures. Control of fire is one of mankind's greatest achievements. For thousands of years man has seated himself beside the campfire, gazed into dancing flames and lost himself in dreams.

It's wise to pack waterproof matches, but a cigarette lighter is even better, although the butane types may not work well in very cold weather. It is advisable to have a backup lighter such as a magnesium fire-starter. You shave a small amount of magnesium from the solid block and ignite it with sparks produced by scraping the steel insert with your knife. Don't build a huge fire. You don't want to cause a wildfire; you want a blaze small enough to manage. Remember, you are going to have to collect enough wood to sustain it. Along with a flashlight and whistle, a fire can aid rescuers in locating you.

The compass could have helped you earlier if you had paid attention to a map before you left your vehicle (provided you have not become disabled). For instance, if you knew you were hunting south of a



road running east and west, you could find it by walking north. This will work only if you know the lay of the land, so study a map before you venture into unfamiliar terrain. There is no merit in walking north for several hours, only to find an impassable swamp or river before you. If feasible, take a portion of the map with you. A resealable plastic sandwich bag will protect a map from inclement weather. I find county road maps produced by the Florida Department of Transportation to be excellent.

A whistle, or other noise-maker, is eminently desirable. Remember, rescuers have to locate you somehow. There is no sense in hollering your head off when an inexpensive, little whistle will serve far better and consume much less energy. In addition, the shrill whistle creates a distinctive sound that will be identified by searchers as a noise not belonging in the forest. If you are hunting from a stand and have a small shooting bag or pack, consider carrying one of the small pressurized air horns many boaters use. These do not require lung power and can be heard over considerable distances. They are, in fact, shockingly loud.

If you can, save the flashlight for signalling. Those batteries will not last all night if used constantly. Use your signals, light or whistle when your chances of being noticed are best. Do not signal constantly; you will only tire yourself. The fire provides a signal, light by night and smoke by day. Signal when you hear or see potential rescuers, otherwise every half-hour should be sufficient. Don't forget your hunter orange vest. It will serve as an excellent signal flag. Aircraft should be signalled immediately upon sight. Three flashes of light (or three blasts of the whistle) are widely recognized distress signals. Avoid signalling with your firearm. Stray bullets are dangerous. In an extreme emergency, the gun may be used to fire three closely spaced shots.

I assume you have a knife. It does not have to be fancy or specialized, but it should be reasonably rugged. It will come in handy for rigging shelter (and dressing that deer). I am a bit leery of some of the complex survival knives on the market, those akin to cavalry sabres with self-contained kits, built-in compasses, the kitchen sink, etc. Some of these are not especially well made.

If you are going to spend the night outdoors, especially in wet or cold weather, some cover may be required. Even a heavy dew can make you quite miserable by morning. If you are injured, shelter will conserve body warmth and alleviate shock. Last season a young man became lost in northwest Florida and survived a below-freezing night by building a lean-to. He was wearing only lightweight clothing and had no fire. You can construct a simple brush lean-to with your knife.

One of the reflective emergency blankets sold by many sporting goods suppliers also is very useful. These are lightweight, compact, and can be used to create a shelter, or you can wrap up in it to retain body heat. Similar emergency sleeping bags are also available. A few yards of cord can be very handy in rigging your shelter.

By now you have noticed the absence of traditional survival gear in our kit: food, water, fishing line and hooks, bandages, etc. You should be found long before you need any of these. A few aspirin, or other pain-relievers, could come in handy and require little room in your kit. A bandanna is useful as an emergency bandage. It would be nice to have some food. I like to take a couple of commercial breakfast bars along, but I usually can't resist eating them long before the day is over. You can employ your ammunition pouch as a temporary water container or drinking cup, but be aware of potentially contaminated water sources before using unsterilized water. You may think of other items you want in your kit. Don't make it too heavy or you will leave it at home.

Remember, these tips are intended for outdoorsmen anticipating emergency situations where someone will soon be searching for them. If you are venturing alone into true wilderness (or onto the utterly unforgiving sea), where days may pass before you are found, or where the terrain itself precludes easy rescue, preparations for survival must be more comprehensive. Remember, if you are not expected to return for two weeks, you must be prepared to survive at least that long.

To sum up: prevention is best. Tell someone where you are going and when you expect to be back. Know where you are in relation to important features of the land. Take a map, compass and a light, and you are more likely to walk out safely. Finally, be prepared for the unexpected. There are many good books on the survival arts that provide fascinating reading. A study of these will enhance your ability to enjoy wild places and increase your outdoor skills.

Gray Bass usually can be found at the Commission's Blackwater Research and Development Center in Holt, where he serves as director.

Kit items:
- Knife
- Compass
- Matches (waterproof) / Lighter
- Magnesium fire-starter
- Bandanna
- Flashlight and Whistle
- Blanket or sleeping bag

Optional:
- Cord
- Food / Water and canteen
- Water purification tablets
- Aspirin

The Invisible Photographer

Shooting from a blind is a key to success.

Text and Photographs by William J. Weber

Of all the tools, gadgets and accessories available to wildlife photographers, a blind is perhaps the most indispensable — next to a good camera and lenses, of course. Most outstanding wildlife photographs are taken from blinds.

A blind allows you to observe animals and birds behaving naturally, because you don't represent a potential threat. Although a blind, like a tripod, can be inconvenient to carry or set up, the effort is well worthwhile.

Types of Blinds

There are several types of temporary blinds. Most are tent-like structures. You can build them in trees, over a river, in a pit or on a boat. A blind should be relatively easy to set up and take down. Place it in an area where wildlife activity is common, the opportunity for good pictures exists, the light is adequate, but not harsh, and the background is pleasing.

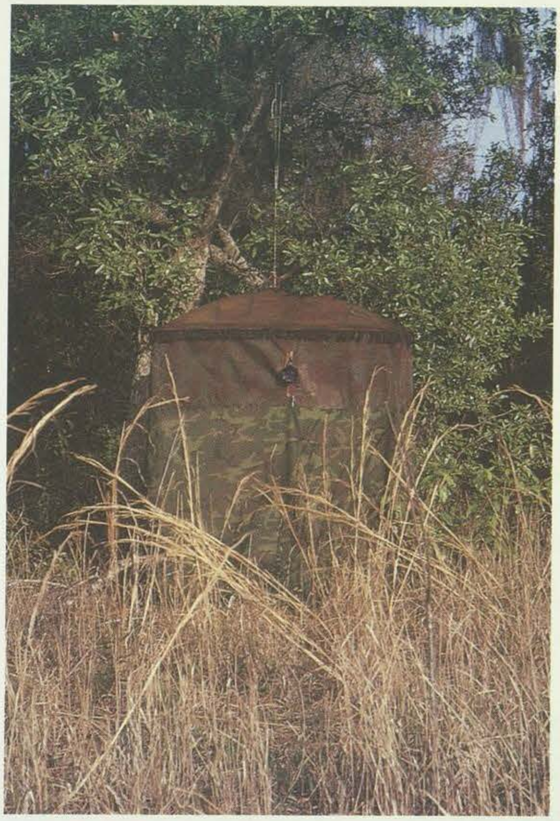
One of the simplest blinds to use is your car. Birds and animals in parks and wildlife refuges are conditioned to cars moving through the area. But if you make noise or open the car door, a wild bird or animal almost always will flee.

A good wildlife photographer is always prepared for a "photo opportunity." When driving through a likely area, have your camera's shutter speed and f-stop preset. Pre-focus at a moderate distance, and use the partially open window as a camera rest. It helps to pad the edge of the window, so the camera doesn't make noise when you move it. You'll get excellent shots if the critters are reasonably close.

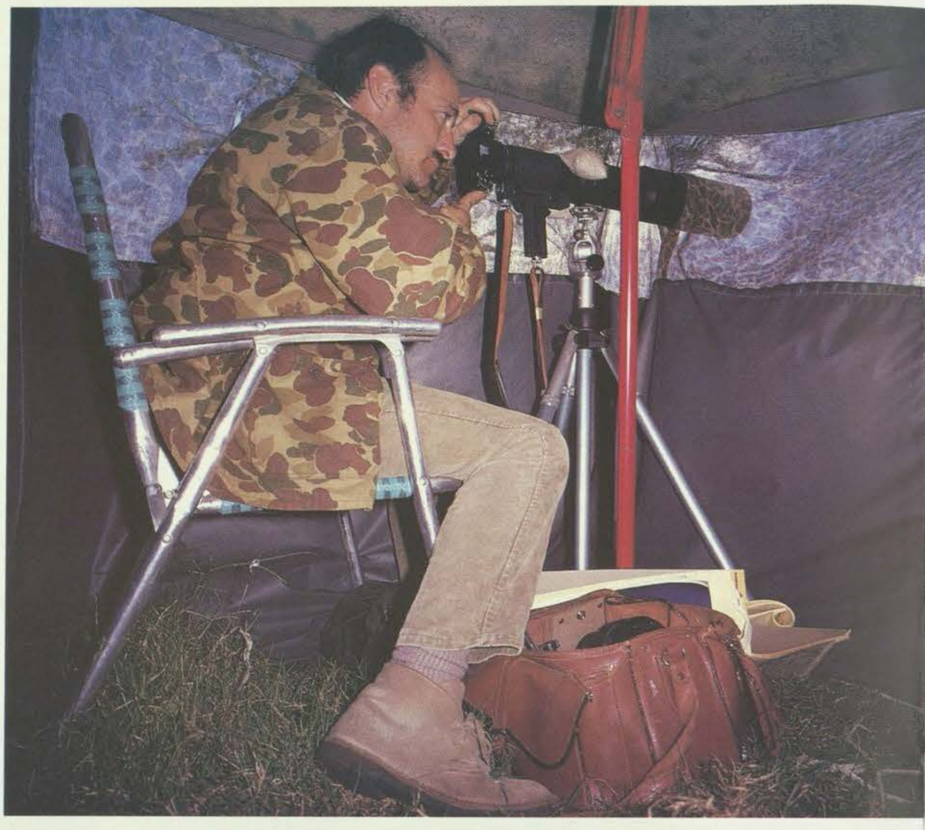
If your subjects appear nervous, hang a strip of cloth over the open window and shoot from under its lower edge. Generally, conditioned wildlife ignores a car and will feed and do all the normal things that make for good pictures. Remember to turn off the engine before you shoot, because its vibration will make for unsharp images.

The type and placement of your blind is limited only by your imagination. I frequently make temporary blinds in our yard or along a nearby lakeshore. If I find a nesting bird, or discover that flying squirrels are visiting the bird feeder at dusk, or that wood ducks are feeding along the lakeshore, I set up a blind. Most are simple wood frames draped with camouflage cloth. I cut a hole for the lens to fit through and a few small slits here and there for viewing the immediate area.

If I intend to work the same spot for some time, I build a more permanent structure. Generally, it will be large enough for a chair and a tripod. My wife, ▷



Using mosquito netting lets you see out, but wildlife can't see in. Cut a hole or two for your lenses.



If you plan to stay in your blind for hours at a time, make sure it's comfortable.

Barbara, has made several camouflage covers that have panels of several layers of mosquito netting sewn in at the right height to serve as windows. You can see out through the netting, but because it is shady inside the blind, the critters don't see you. We designed these blind covers to include zippered openings at several different spots for my lenses.

I use these same covers to make a blind in my small boat for photographing a rookery or for taking pictures along the shoreline of a lake, river or pond. I also use them to make a blind high in a tree for taking pictures of a hawk's or eagle's nest.

I've dug shallow pit blinds on a grassy prairie and made pictures with the cover draped over me. The same blind-cover draped over a framework of sticks on a sandbar in a river allowed exceptional eye-level pictures of ducks and wading birds.

Do Not Disturb

I'm convinced that, even though I use a blind, the birds or animals know I am there. But the blind just doesn't represent the same threat that the photographer poses in the open.

In an egret study, in cooperation with the Florida Game and Fresh Water Fish Commission, I used a more permanent rookery blind daily for over six weeks. I talked to the birds as I eased my boat into the island. Nesting and courting birds would flutter 10-20 feet away as I climbed out of the boat and up into the blind. As I set up my cameras, I continued talking to them, just loudly enough so those nearby could hear me.

I ended my monologue with, "All right, I'm set up now, you can come back to your nest." Of course they don't understand the words, but I believe they do understand the tone of voice. In two minutes they were back at their nest sites doing bird things, completely ignoring me and the clicking camera.

When I was ready to leave the blind, I didn't pop out like a jack-in-the-box and cause panic, I spoke to them and warned them I was coming out. Before I finished talking, the birds moved back about 10 feet from the blind. It seemed they waited for me to get in the boat and then returned to their nests.

There was never any panic. They were so accustomed to the blind that several cattle egrets and a snowy egret built their nests within three feet of it — too close to take pictures with a long lens. This is typical of my experiences in a blind. Hawks, woodpeckers, deer and most other creatures seem to know I'm there, but if I stay reasonably quiet and don't move around too much, they tolerate me and give me pictures I can't get any other way.

Getting Ready To Shoot

When your blind is set up, make sure it's comfortable, especially if you plan to be in it for hours at a time. It's hard enough to sit for a long time when you're comfortable, impossible when you are not. Commission biologists taught me to make blinds large enough for sitting in an aluminum folding chair behind the tripod and camera.

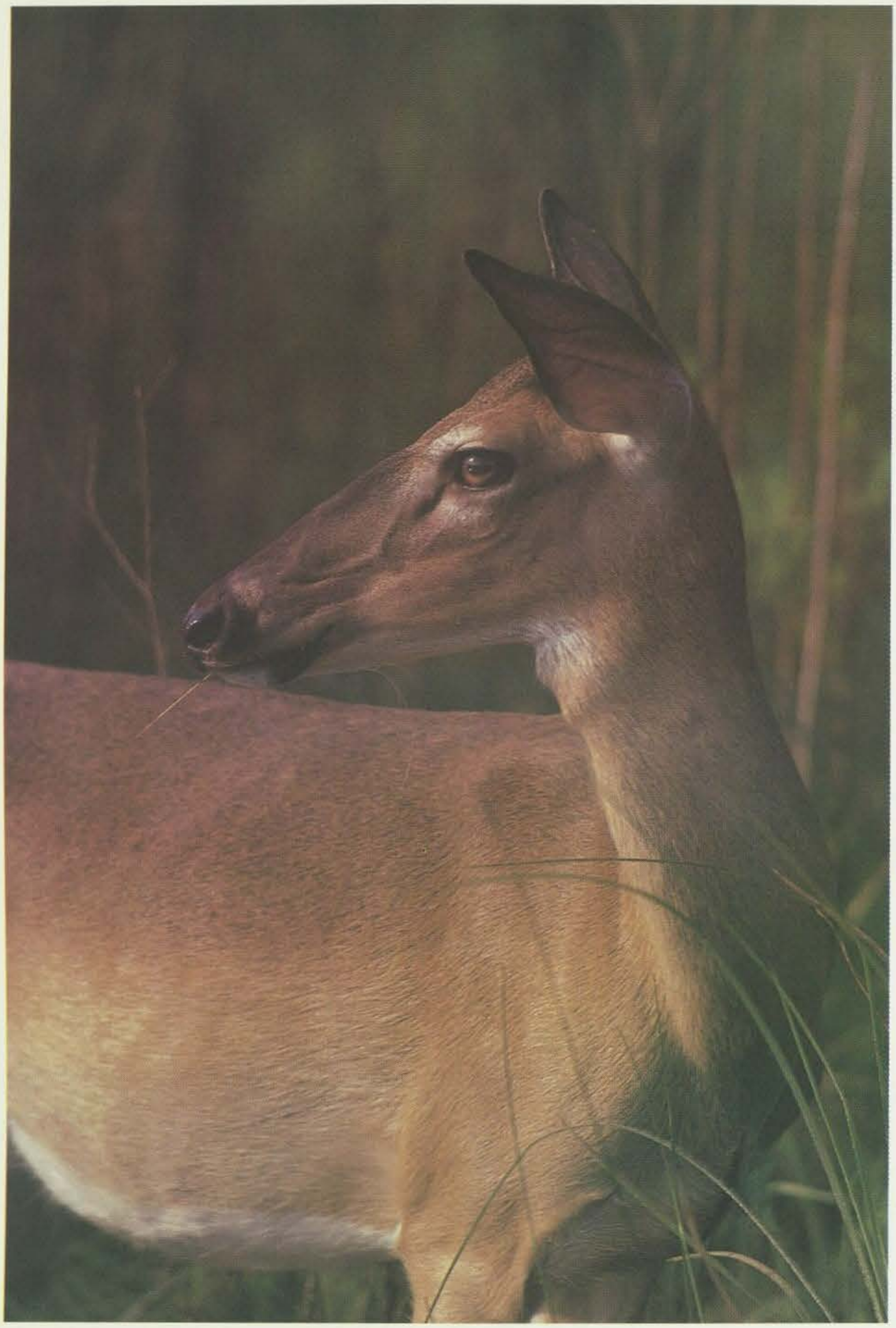
In late fall and winter, dress more warmly than you think will be necessary. It's not enjoyable being outside in the cold, and you can always take a layer off if you get too warm. Bring a thermos of hot tea or coffee, or just a bottle of water. If you don't bring anything to drink, I guarantee you'll be thirsty 10 minutes after you settle down. Bring a snack and something to read, and you can be content for as long as it takes to wait out your quarry.

After setting up the blind, check again to be sure it is in the best position for good light. Know where the sun will come up, the path it will travel and where it will set. Check the field of view from the blind. Does anything obstruct your view? Is the background pleasing, and does it contribute to the picture rather than add unnecessary clutter?

Baiting an area near your blind can bring birds and other critters into camera range while you wait for your primary subject. This is legal in Florida as long as you do not hunt wildlife on or over a baited area. Even if you're primarily interested in turkey pictures, a little grain sprinkled in the grass often attracts a variety of seed-eating birds. Sunflower seeds and whole corn kernels will attract large birds, squirrels and other critters. Take pictures of them while you wait for the wild turkeys. If the turkeys find the corn, they will stay in camera range longer, too.

Choice of bait for your blind is limited only by your imagination. Apples, sweet potatoes, nuts, acorns or even a road-killed opossum have potential to attract subjects.

Once in your blind, get settled and ready. Move every twig or bit of trash that might make a noise if you shift your feet. Then set up your tripod and camera. Take a light-meter reading on a tree trunk or anything near the color of your expected ▷



Sitting in a blind for hours sounds terribly boring, but I have seldom found it to be so. There is always something to see in the wild.

subject. Focus your lens on an object near where you expect your subject to appear. Have extra film close at hand and other lenses ready, so you don't have to move much when you start shooting. Sitting in a blind for hours sounds terribly boring, but I have seldom found it to be so. There is always something to see in the wild, and I really enjoy the quiet peacefulness.

In most cases, it's best to be in your blind before daylight. It's not just most effective, it's enjoyable to experience the area as the wildlife wakes up and becomes active. Shadowy images in the darkness take solid form as the black night turns gray. Slowly, the night sounds give way to bird songs as dawn breaks.

A large, ghostly owl slips past without a sound. As light breaks, mice scurry to their sanctuaries. A flight of ducks whistles by overhead, leaving their roost to feed. You can't see them, but you recognize the sound. In the edge of the brush you hear a larger creature slowly making its way toward you. Deer? Turkey? Wild hog? You take a light-meter reading in the dim light. Not enough to shoot a picture yet, so you relax but continue to watch.

The first hour of early light is usually the most productive time for wildlife photography. Some critters are moving back to cover after finishing their nocturnal day, while others are just starting out.

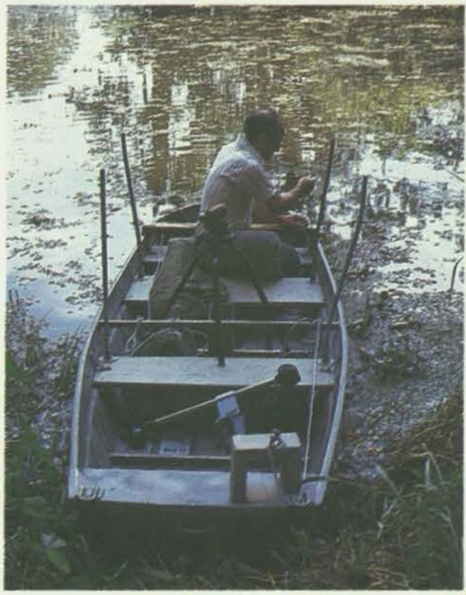
The activities of the wild creatures during this period of soft, diffused light make the effort it takes to get up in the darkness and stumble out to your blind well worthwhile. With a little luck, you can have the dramatic pictures others merely dream of taking. ●

William J. Weber is a veterinarian and free-lance photographer and writer. He is the author of "Florida Nature Photography," scheduled for release in October.

Use Caution When Photographing Nesting Birds

It goes without saying, never set up a blind when it might interfere with or endanger nesting birds. This is true for song birds, herons and egrets that nest in rookeries, and especially endangered species. Set up rookery blinds before the nesting season, not once nesting has started. To force rookery birds off their nests at mid-day exposes eggs to the hot sun. Even 20 minutes can do them in.

Federal law protects migratory birds, their nests and eggs from disturbance. Photographers wishing to set up blinds do not need a permit, but it is recommended that you advise the landowner or caretaker of your activities before setting up a blind, especially if you plan to do so on state or federally owned land.



William Weber constructs a boat blind for shooting photographs on the river.

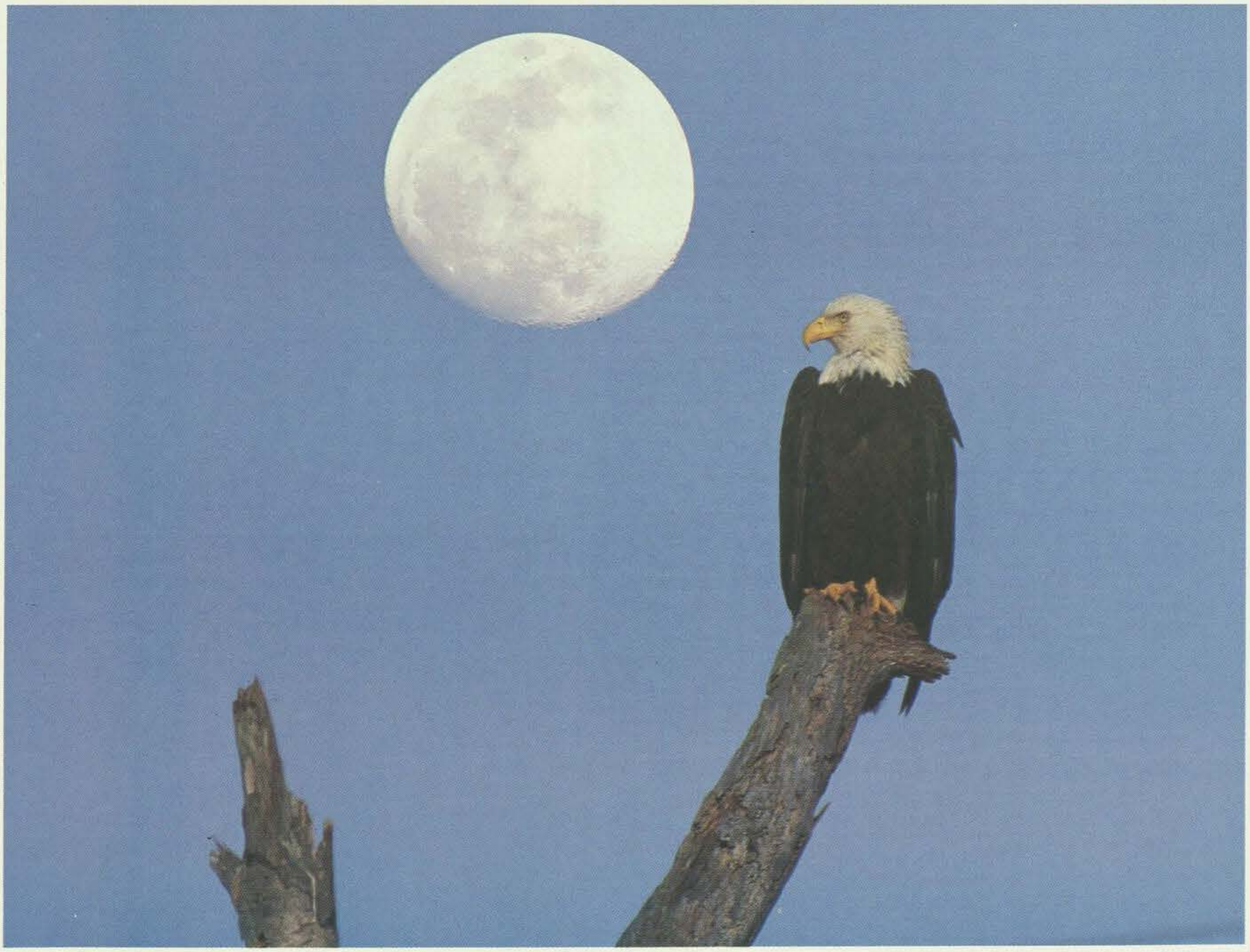
1992 Photo Contest Winners

Birds

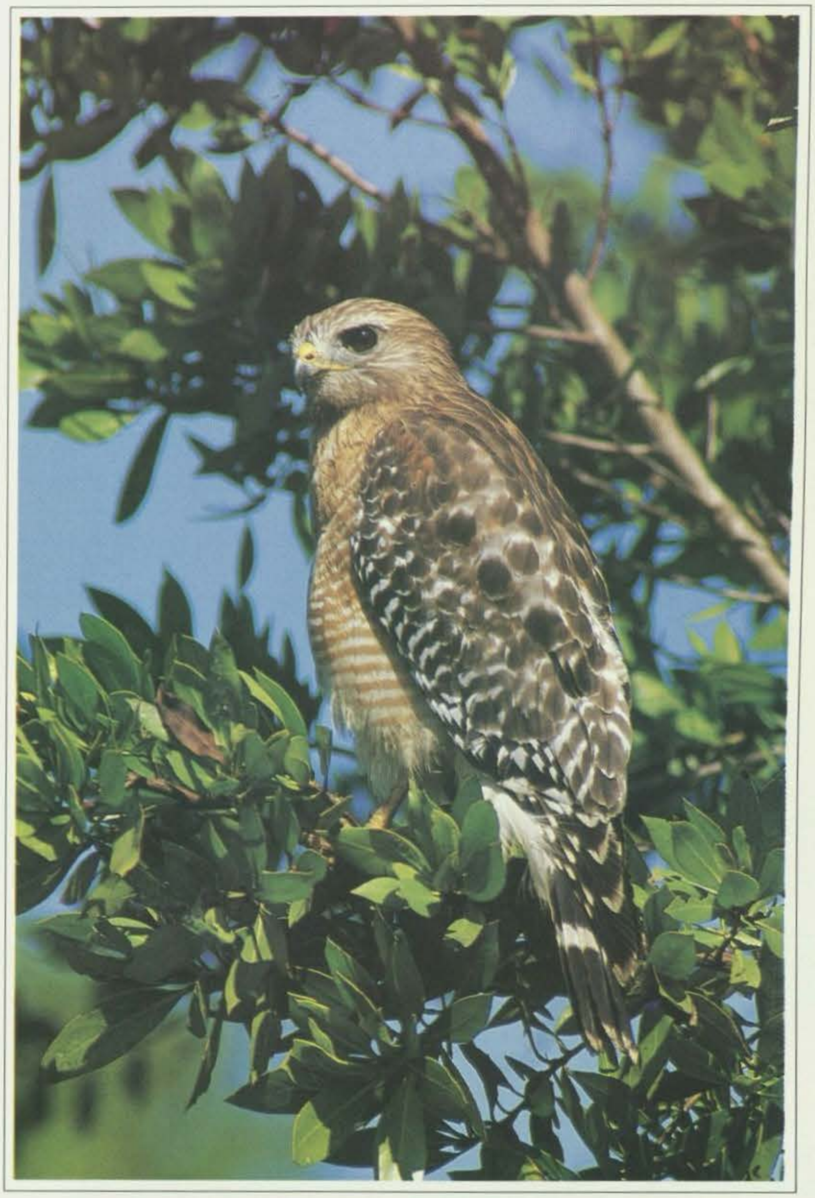
The diversity of Florida's birds and mammals is well represented by the 1992 FLORIDA WILDLIFE photography contest winners, featured on the following pages. Some of the photographed species are rare, others more frequently captured on film. Nevertheless, the judges found the contest entries exceptional and were hard-pressed to select such a few winners.

The winning entries in Categories C and D, "Wild Animals Other Than Birds and Mammals" and " Florida's Natural Environment," will appear in the November-December issue.

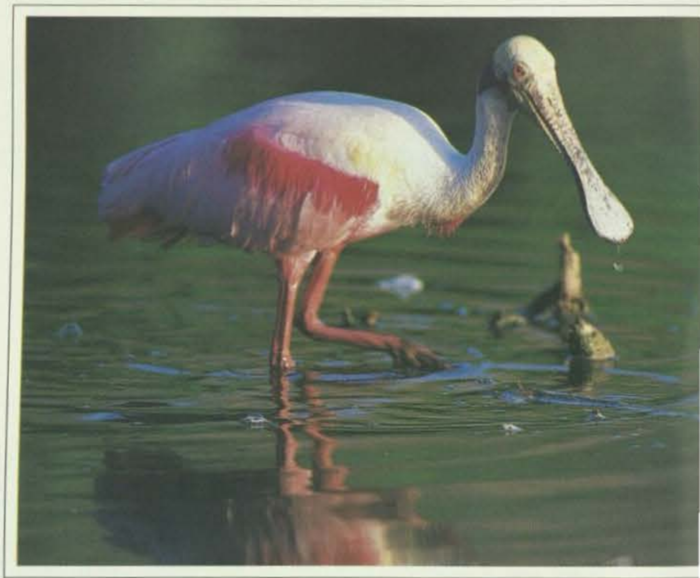
FIRST PLACE: *BALD EAGLE by Bob Evans Jr.*



1992 Photo Contest Winners

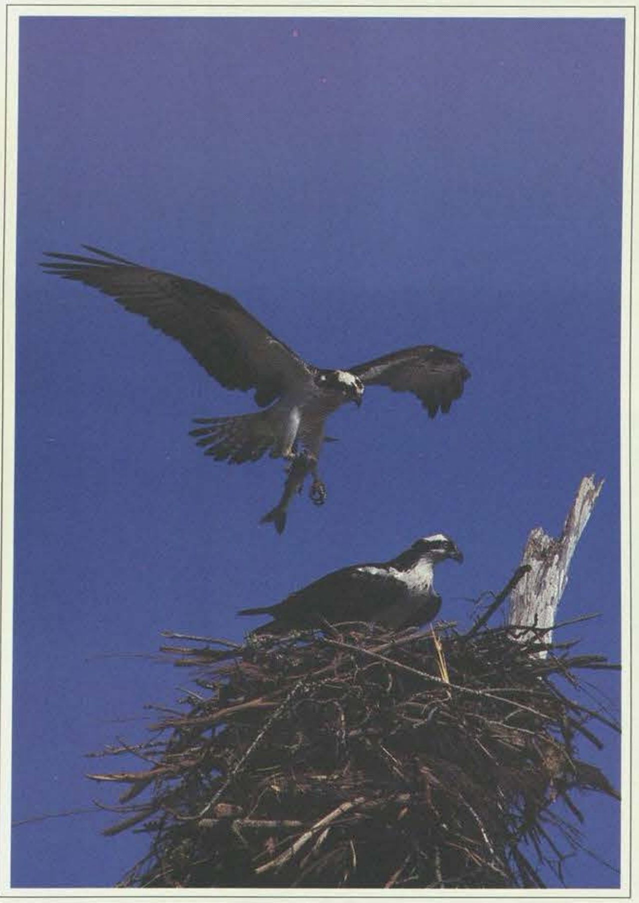


SECOND PLACE: *RED-SHOULDERED HAWK by Jeff Ripple*

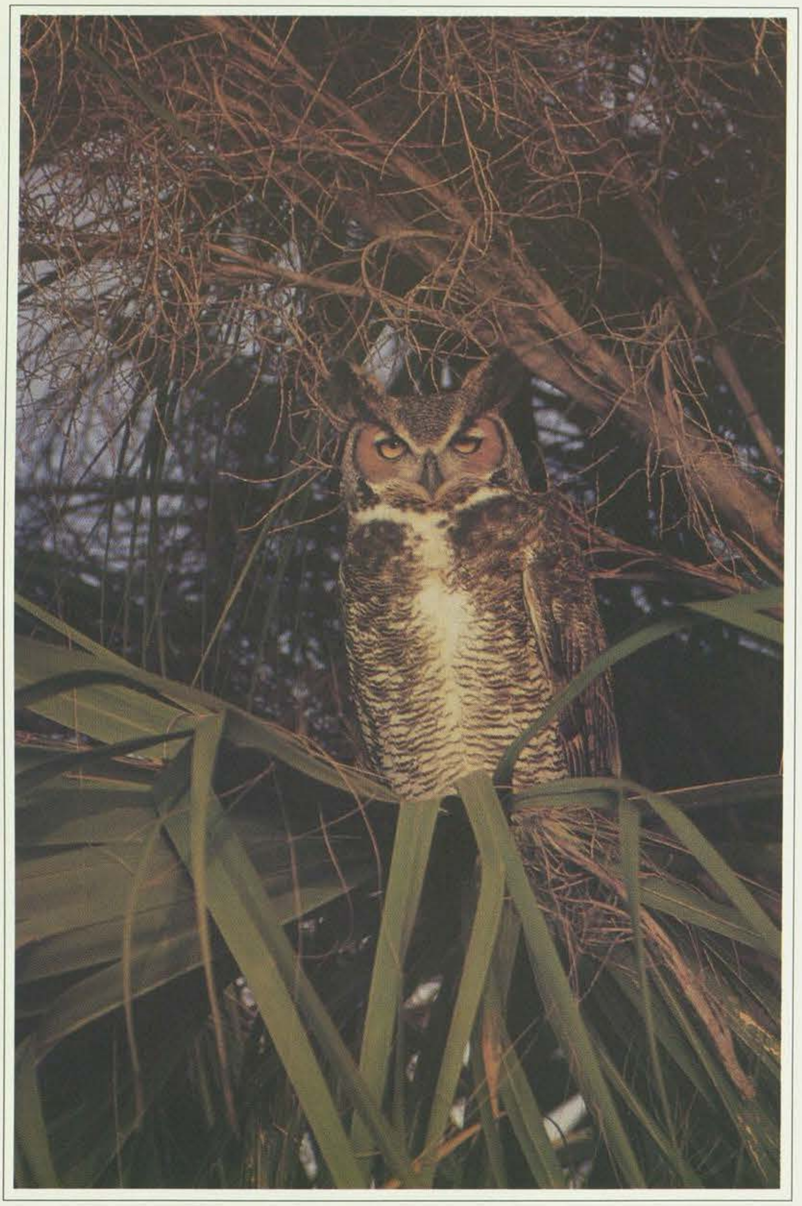


HONORABLE MENTION:
ROSEATE SPOONBILL by Kevin Barry

1992 Photo Contest Winners

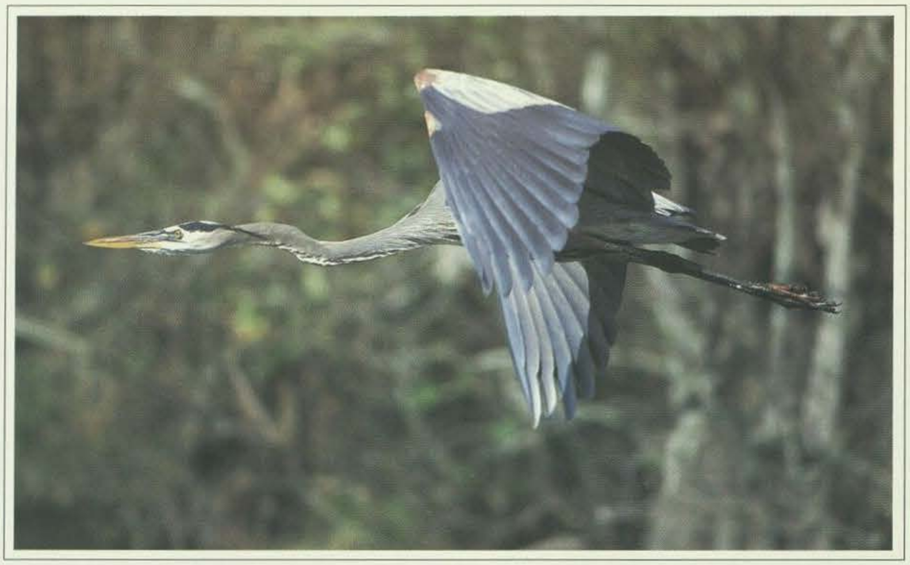


HONORABLE MENTION: *OSPREYS by Steve Shirah*



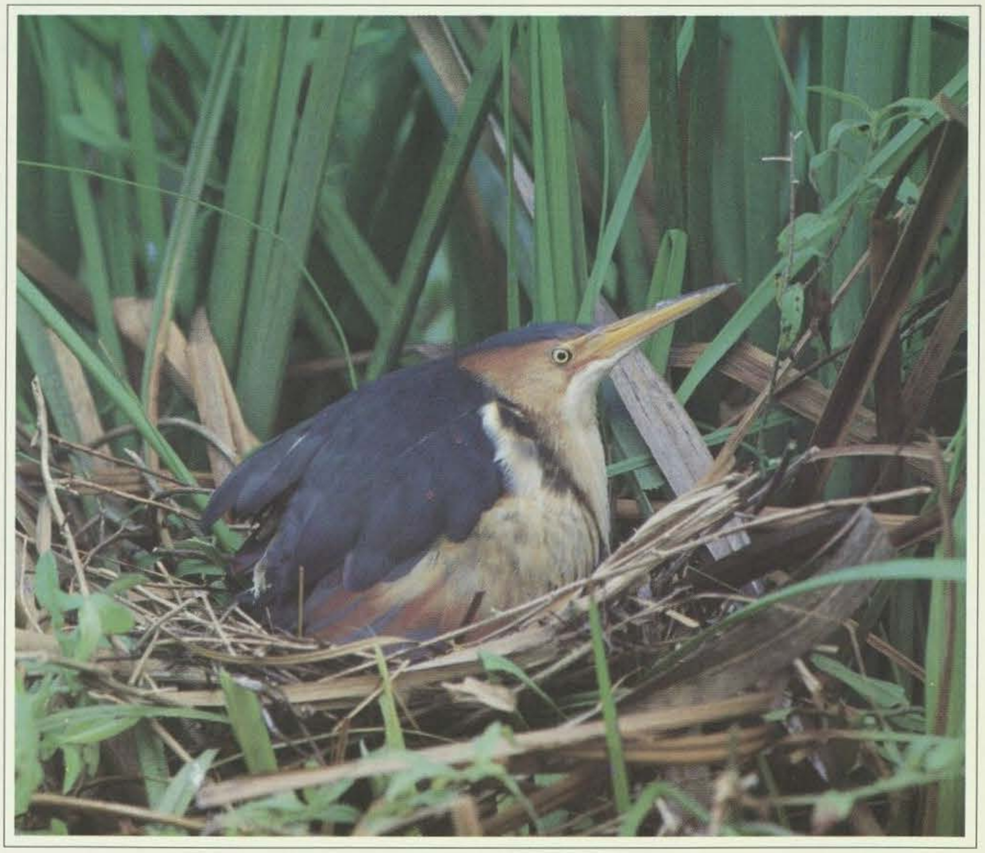
THIRD PLACE: *GREAT HORNED OWL by Jim Angy*

1992 Photo Contest Winners

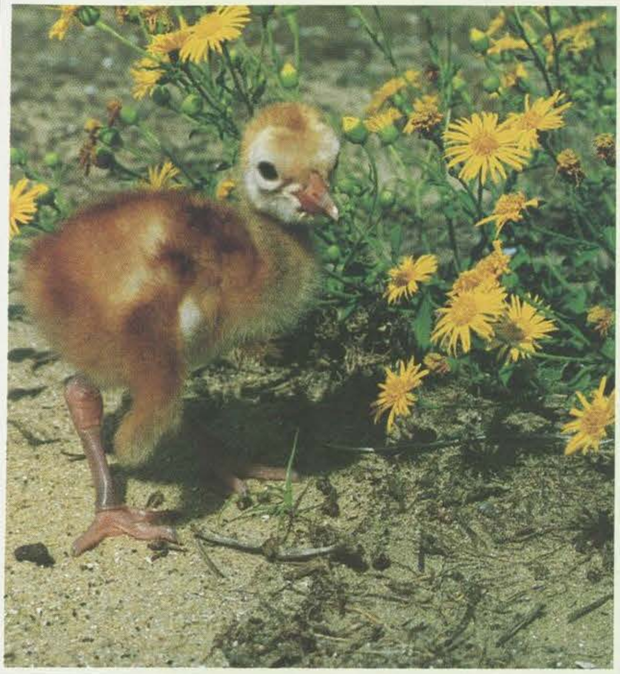


HONORABLE MENTION: *GREAT BLUE HERON by Bob Evans Jr.*

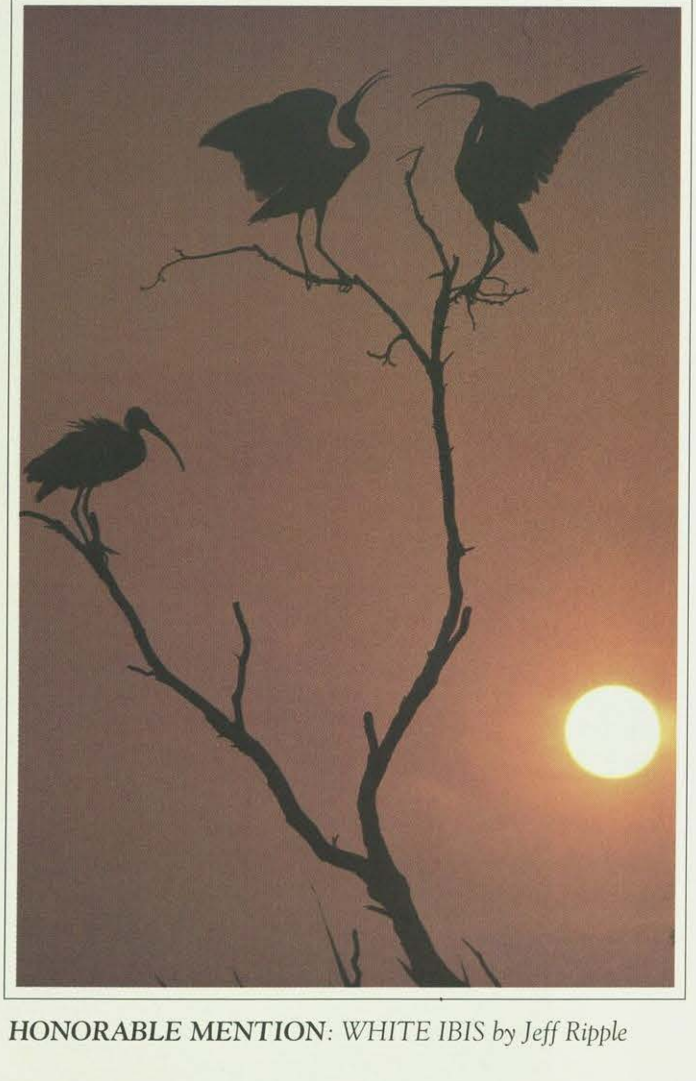
HONORABLE MENTION: *LEAST BITTERN by Barry Mansell*



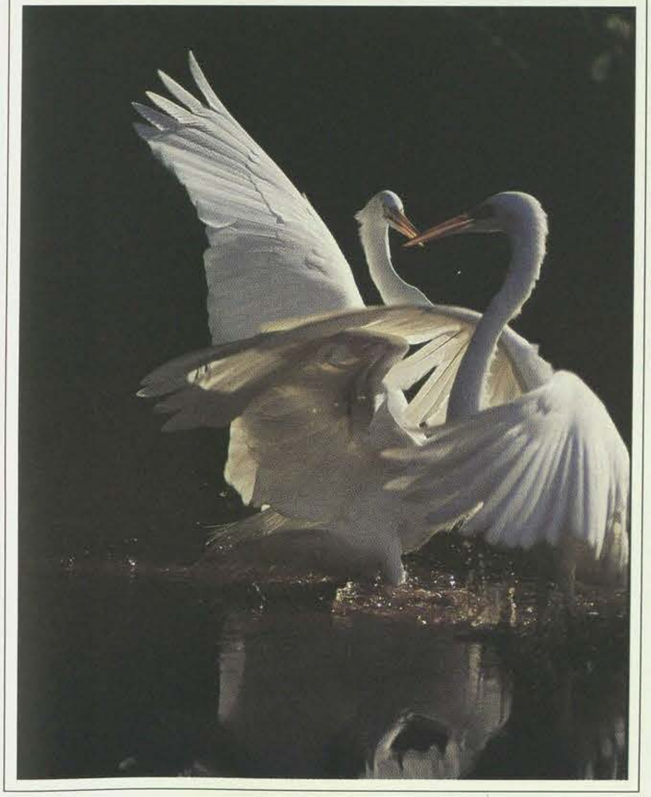
1992 Photo Contest Winners



HONORABLE MENTION:
SANDHILL CRANE by Jim Angy



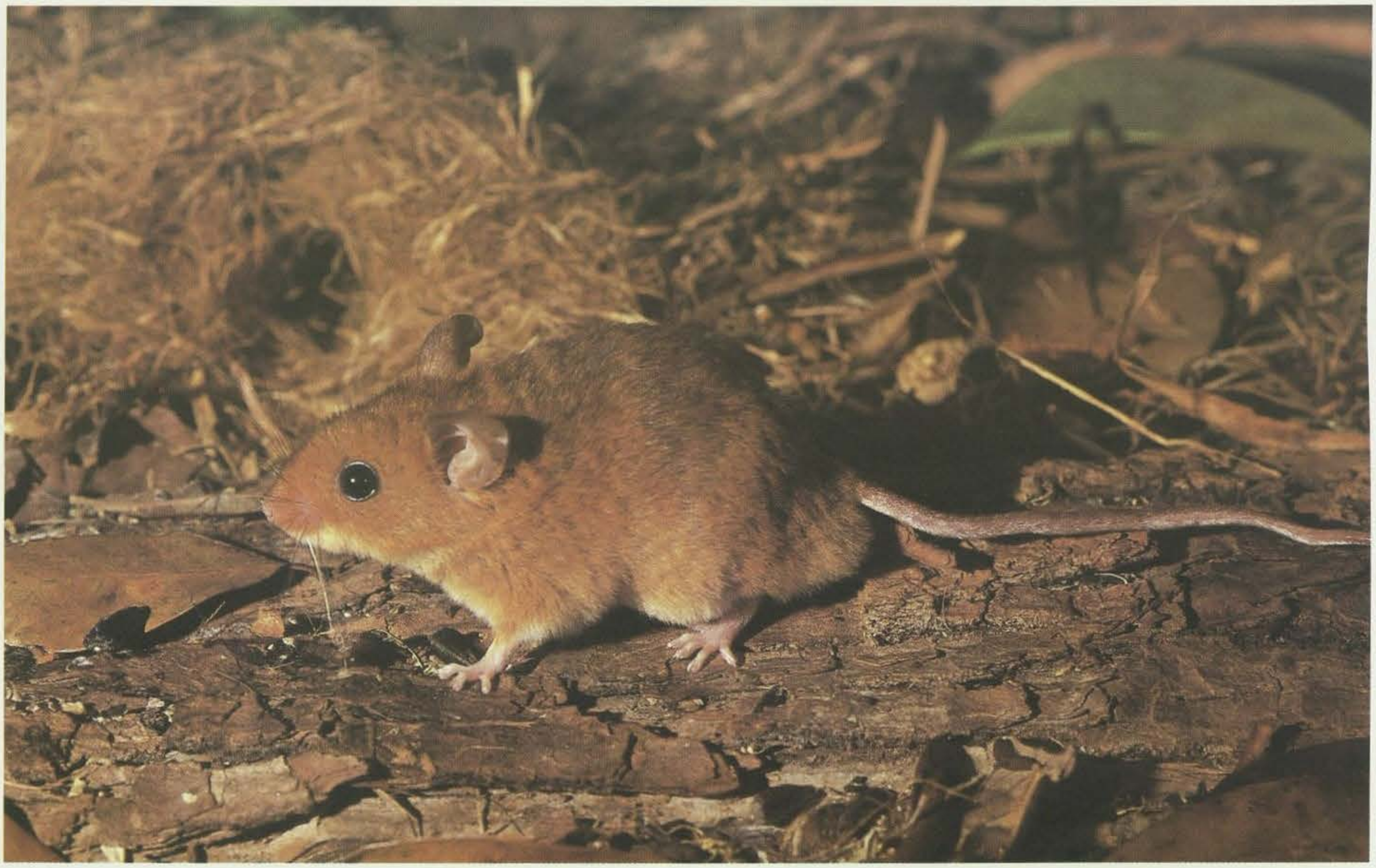
HONORABLE MENTION: *WHITE IBIS by Jeff Ripple*



HONORABLE MENTION:
GREAT WHITE HERONS by Tim Browning

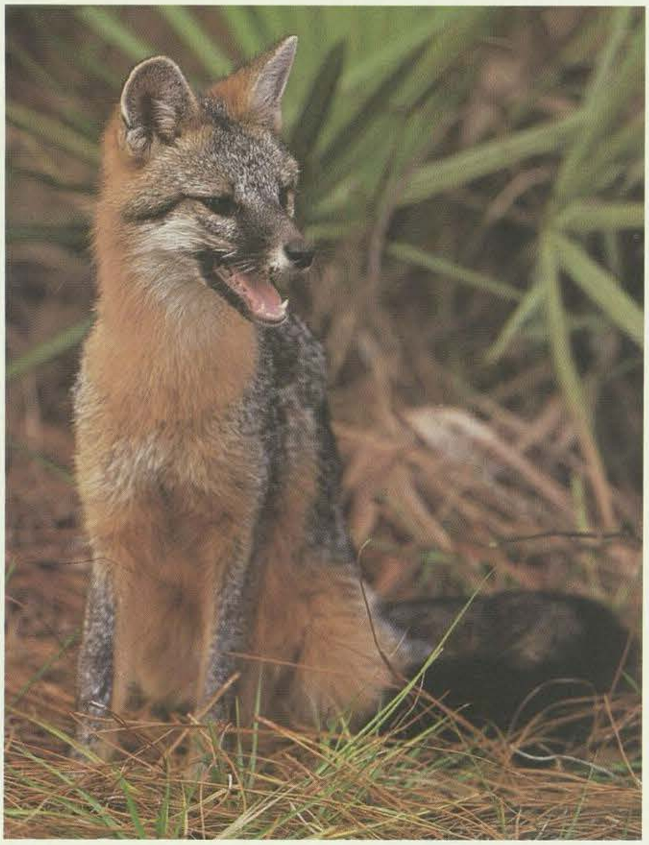
1992 Photo Contest Winners

Mammals



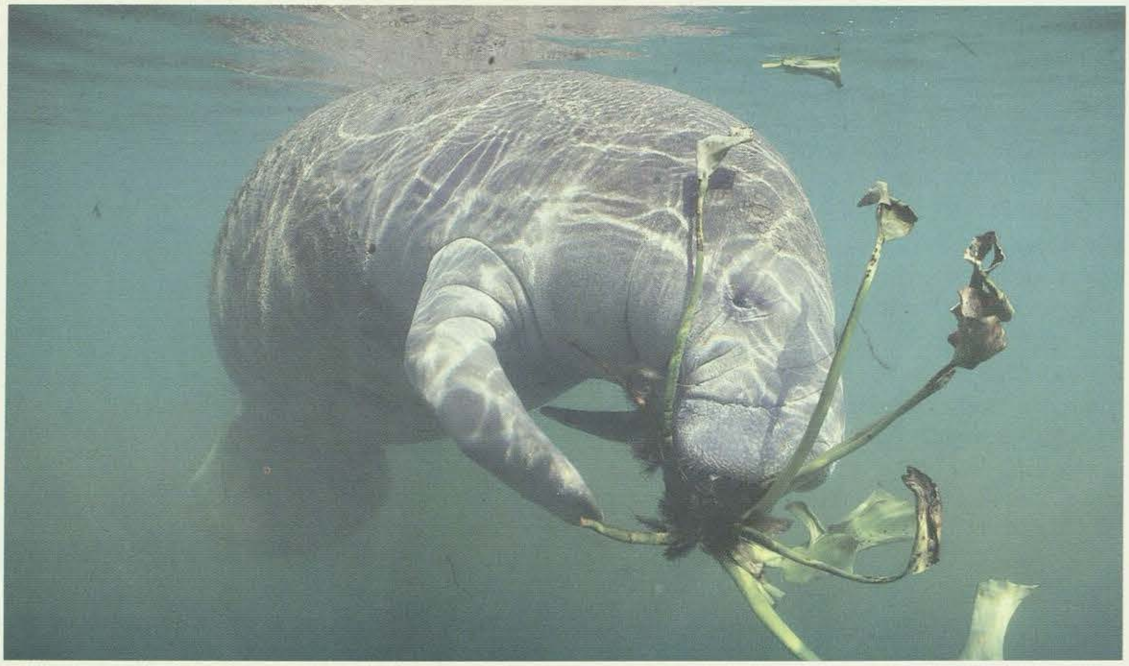
FIRST PLACE: *GOLDEN MOUSE by Barry Mansell*

1992 Photo Contest Winners

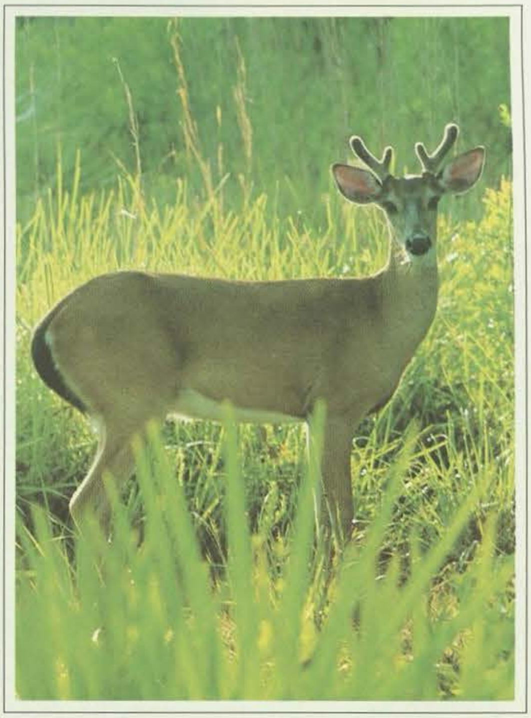


THIRD PLACE:
GRAY FOX *by John H. Flower*

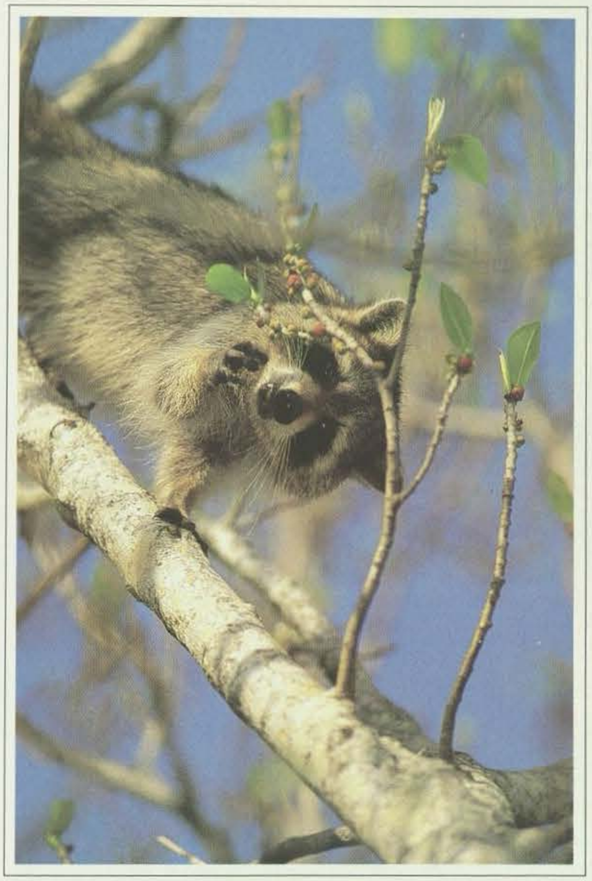
SECOND PLACE:
MANATEE *by Mark J. Thomas*



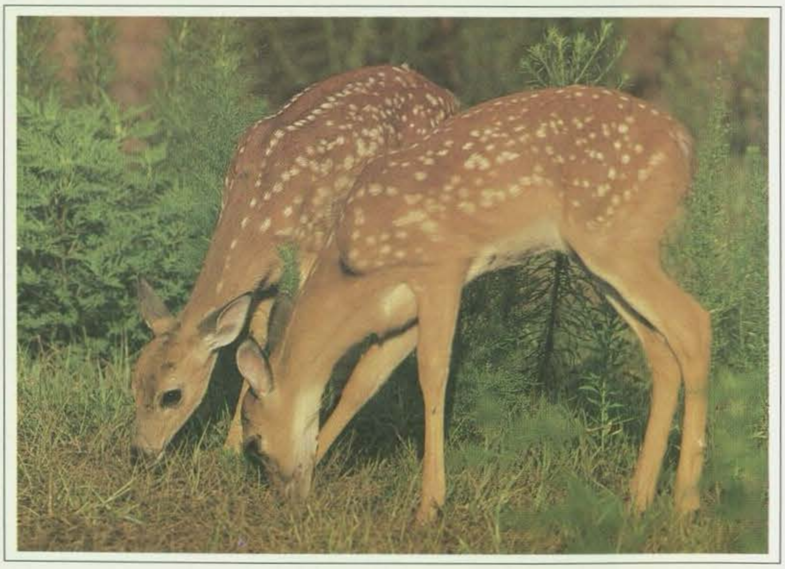
1992 Photo Contest Winners



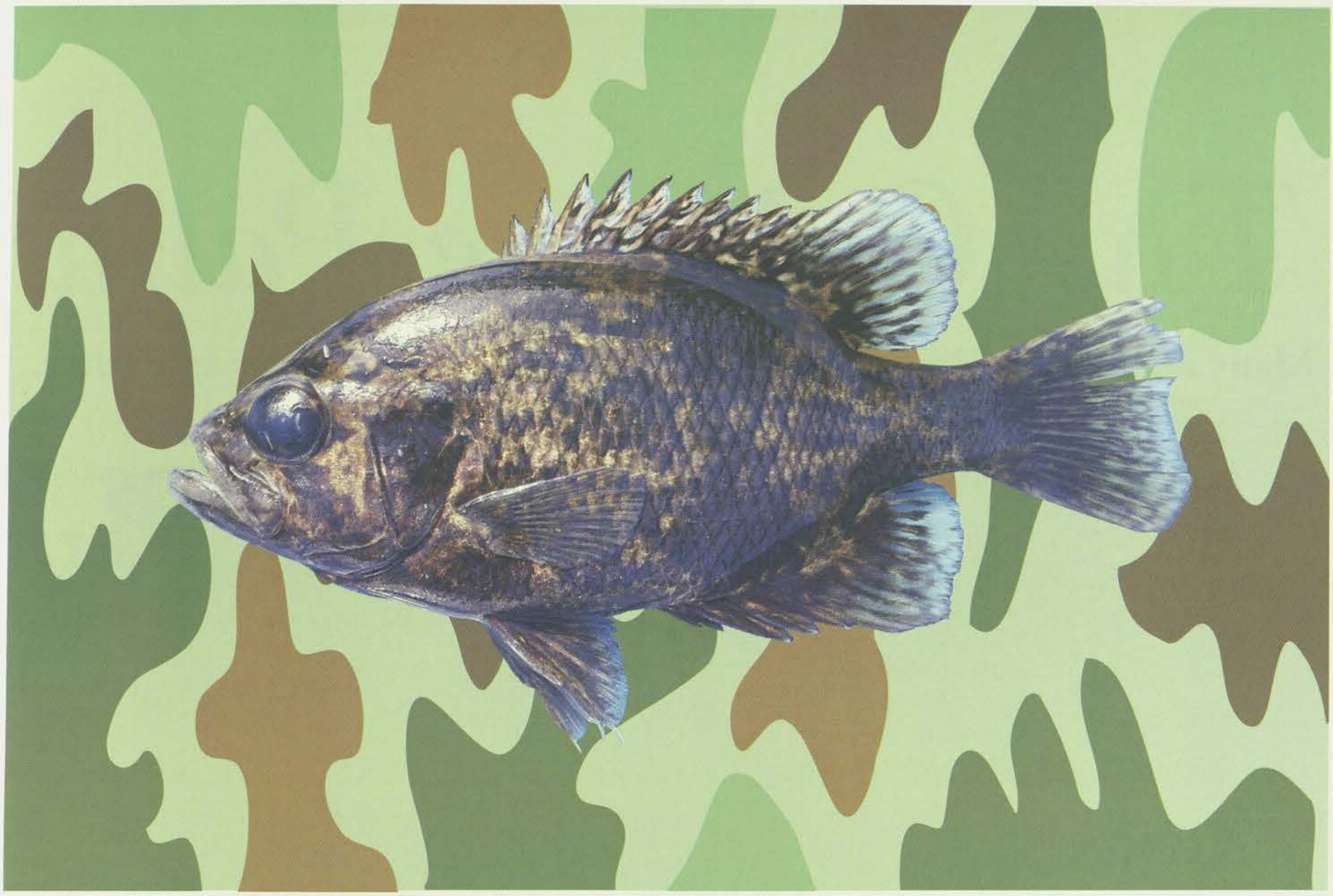
HONORABLE MENTION: *WHITE-TAILED DEER by Jim Angy*



HONORABLE MENTION: *RACCOON by Charles McRae*



HONORABLE MENTION: *FAWNS by John H. Flower*



Camouflaged Fish

Text and Photograph by Gray Bass

Florida anglers practicing their sport in unspoiled panhandle streams may land a fish seemingly clad in jungle fatigues. When they add this scrappy little soldier onto the stringer, they usually think they have caught another warmouth. The mottled camouflage color pattern, however, provides a more appropriate common name — shadow bass. In truth, the shadow bass closely resembles the shifting underwater shadows where it dwells.

Belonging to the sunfish family, along with the black basses, bream and crappie, *Ambloplites ariommus* has three close relatives, the rock bass, Roanoke bass and Ozark bass, all of which live outside of Florida. Shadow bass inhabit Gulf Coast streams, ranging westward from the Apalachicola River drainage of Georgia and Florida to southeastern Louisiana, and northward to Arkansas and southeastern Missouri.

Though often mistaken for the warmouth, this superficially similar sunfish can be readily distinguished by the presence of six spines in the anal fin, as opposed to three in that of the warmouth. In streams where they both occur, the warmouth is usually more common and thus more familiar to anglers. The shadow bass frequents the same "hangouts," takes the same baits and tastes just as good as other panfish.

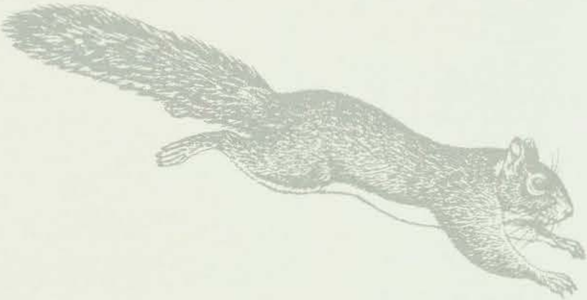
Shadow bass live in both large rivers and small creeks, where they tend to associate closely with cover such as logs or snags. Their large mouth enables them to select from a wide variety of prey, including aquatic insects, small fish and crayfish. Although the life history of this species is not well-known, the reproductive season appears to begin in April and continue into August. Not a big fellow, the shadow bass rarely exceeds 8 inches in length. And it may not be a pretty fish by some standards, but it's just as much fun to catch, and enjoyable to eat, as any other northwest Florida panfish.

Gray Bass is director of the Commission's Blackwater Research and Development Center in Holt.

The Cabbage Palm

Many animals and insects use our state tree for food, cover and water.

JAN KNOBLOCK



By Susan Cerulean

Wildlife biologist Mark Robson has a special place in his heart for cabbage palm trees. So do the citizens of LaBelle ... certain gourmet cooks and landscape architects. And black bears, raccoons, deer, squirrels, yellow bats, mockingbirds, lizards, frogs and insects galore.

What is it about our state tree that attracts them all?

"As far as wildlife goes," Robson said, "cabbage palms are probably the only native tree that can provide plentiful food, cover *and* water to so many species."

Robson frequently observes squirrels hanging upside down from the leaf bases, or boots, of cabbage palms in his back yard, ripping the fibrous material off the trunk with their teeth.

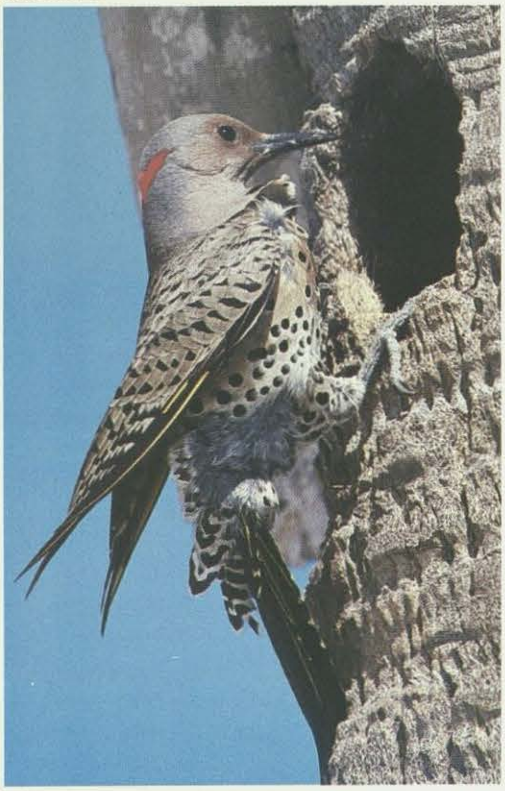
"They jam as much into their mouths as possible, then cart it off to line their nests. In fact, the squirrel nest box I put up contains nothing but palm fiber. Mourning doves, mockingbirds and other songbirds are regular 'customers' for palm fiber, too.

"And boots are virtual storehouses of the small, date-like berries," Robson continued. "I've often seen squirrels stash things behind the boots or simply forage around them, looking for goodies." Robson has observed squirrels eating palm berries, one after another, up to an hour at a stretch, in his West Palm Beach yard. "Sometimes, I've gone out and seen bloated squirrels lying flat out on a frond stalk, with all four legs sprawled out over the sides. They don't even move, they just lie there, not believing their good fortune. To homeowners with cabbage palms on their grounds, Robson advised, "Leave the flowering stalks and berries if you can tolerate a little mess. Wild animals will thank you for it and might offer a payback by processing seeds or burying them," which helps rejuvenate this palm.

Cabbage palm boots also support a variety of ferns, as well as air plants, lichens, grapevines, Virginia creeper and trumpet vines. When water is scarce, wild creatures can find it accumulated in the "cups" of bromeliads that often grow on cabbage palms. Pillbugs, spiders, centipedes and millipedes, insects of many varieties, lizards and frogs are some of the smaller animals that live in the community formed by a single intact cabbage palm crown. In an Immokalee schoolyard, Robson found four harmless yellow bats suspended in the heavy shade of an untrimmed cabbage palm. A possum has taken up residence in a cluster of fronds that have grown together to form a protected nest in his back yard. The Audubon's caracara usually builds its nest of smilax vines in this tree on south Florida prairies, and hawks, crows, wrens and shrikes are among the other birds that nest among the cabbage palm fronds.

The cabbage palm is one of about a dozen palm species native to Florida. Also called sabal palm, the cabbage palm is actually more closely related to grasses than to pine or oak trees. Its range is throughout peninsular Florida and the Keys, though it is curiously absent from the panhandle west of St. Andrews Bay. It grows in many of the state's moist, dense forests, river bottoms, coastal woodlands, salt marshes and offshore keys. ▷

KENT JAGER



Common flickers and other cavity nesters use palms for shelter.

"It's ironic," according to Robson, "that as the south Florida coast was developed, thousands, if not millions, of palms were obliterated. Now you see truckloads of full-grown palms being hauled from the center of the state to the coast for replanting.

"Although I hate to see them stacked on trucks like lumber, at least landscapers are using native trees rather than one of the hundreds of exotic palm species," Robson said. Landscapers value the instant, full-grown effect and ease of transplanting large, woods-grown palms, which grow on both wet and dry sites, and are salt tolerant as well.

No one really knows the impact of the landscape industry on Florida cabbage palm populations and the wildlife they support. Although as the official state tree, cabbage palms are legally protected, they can be harvested on private lands with the owner's permission.

Cabbage palms were esteemed by the Seminole Indians and early settlers for the shelter, fiber and food they provided. Chickees, hurricane-resistent Seminole dwellings built on raised platforms of split palmetto logs, were thatched with roofs of cabbage palm fronds. The open-sided dwellings allowed passage of the slightest cooling breezes. Craftsmen still fashion baskets, mats and hats from cabbage palm leaves. Fiber for brush manufacture comes from the base of young fronds.

The tender, central bud, or heart, of the palm is a valued foodstuff of rural south Floridians, and it is the focus of LaBelle's annual Swamp Cabbage Festival. Each year the LaBelle Jaycees harvest the ivory-colored "hearts" of 200 or so cabbage palms to prepare in local delicacies ranging from swamp cabbage fritters to heart-of-palm salad. The palm's heart, or terminal bud, is situated in the top two feet of tree trunk, and can be cut out only with a chain saw or strongly wielded machete.

Many diners don't realize that the harvest of the cabbage palm's terminal bud causes the death of this tree. The palm's growth is either upward through the terminal bud, or downward through the roots. The trunk has no bark or growing cambium layer, but rather a mass of parallel, vertical fibers of great strength and woody pith. Trees may reach 60-80 feet in height, and are generally covered with the jagged leaf bases of fallen palm fronds, called boots. The palm's rounded head is formed by its leaves, which stand out on stout, 6- to 7-foot-long stalks.

Robson notes that urban folks don't generally know how to prune a cabbage palm — at least as far as would-be animal residents are concerned.

"In the name of tidiness, some people strip off so many of the tree's boots, leaves and flowering stalks that very little wildlife value remains," he said. "When you prune so heavily, you lose the abundant fiber that grows around the boot. That fiber is eagerly sought by almost every bird or mammal that uses a lining in its nest."

Even after death, the cabbage palm can continue to serve the wildlife community. Trunks become riddled with holes as cavity nesters, such as woodpeckers, move in.

"Even coons and possums will continue to use a cabbage palm for shelter long after it has died," Robson reported. And in several artificial reservoirs in south Florida that have flooded out large stands of cabbage palms, he's observed that these trees can become supports for wading bird nests.

"Unfortunately, I think this is a short-term benefit," he said. "The trees eventually die from inundation."

Farther north in Florida, scientists are concerned about hundreds of thousands of cabbage palms along the Big Bend coast dying from another type of inundation. Experts say that sea level has been rising for the last 100 years, but the rate may have been accelerated by a hurricane in the Gulf several years ago.

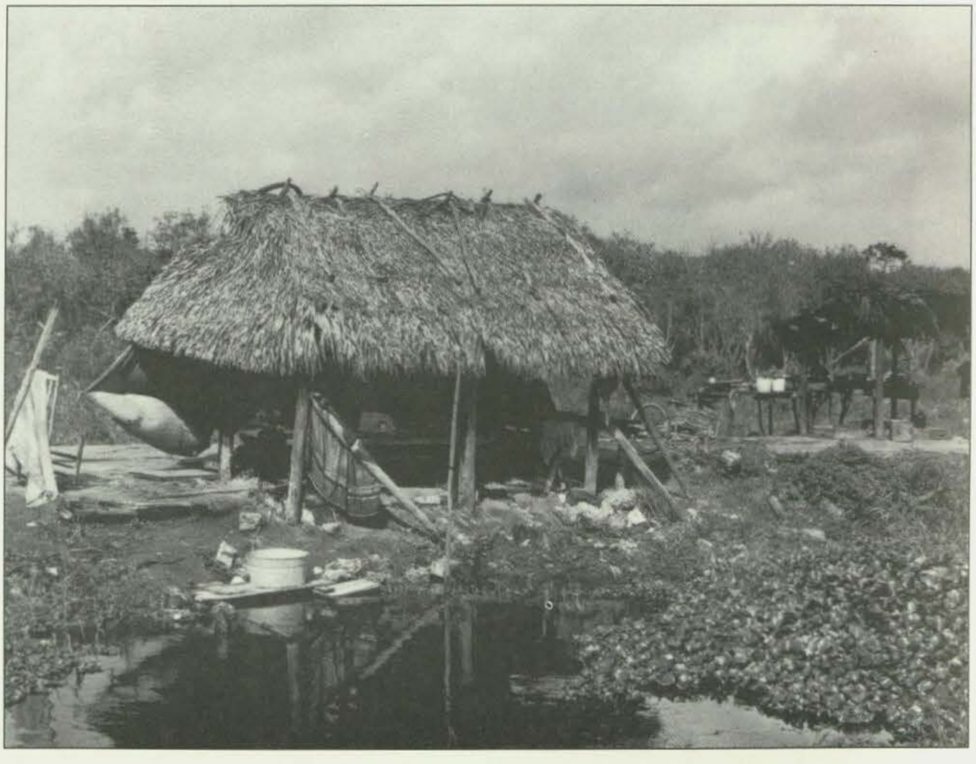
"We are witnessing a fairly sizeable ecosystem change here, and cabbage palm mortality is part of it," said Dr. Jack Putz of the University of Florida. "Wherever we find low-elevation coastal forests in the Waccasassa Bay region, trees are dying and being replaced by salt marsh species."

These trees can still provide habitat, but not food, adds ecologist Dr. Kathy Ewel.

"So the sorts of animals that eat the fruits of the palm, including several birds

Seminole chickees were built on platforms of split palmetto logs and thatched with roofs of cabbage palm fronds.

FLORIDA STATE ARCHIVES

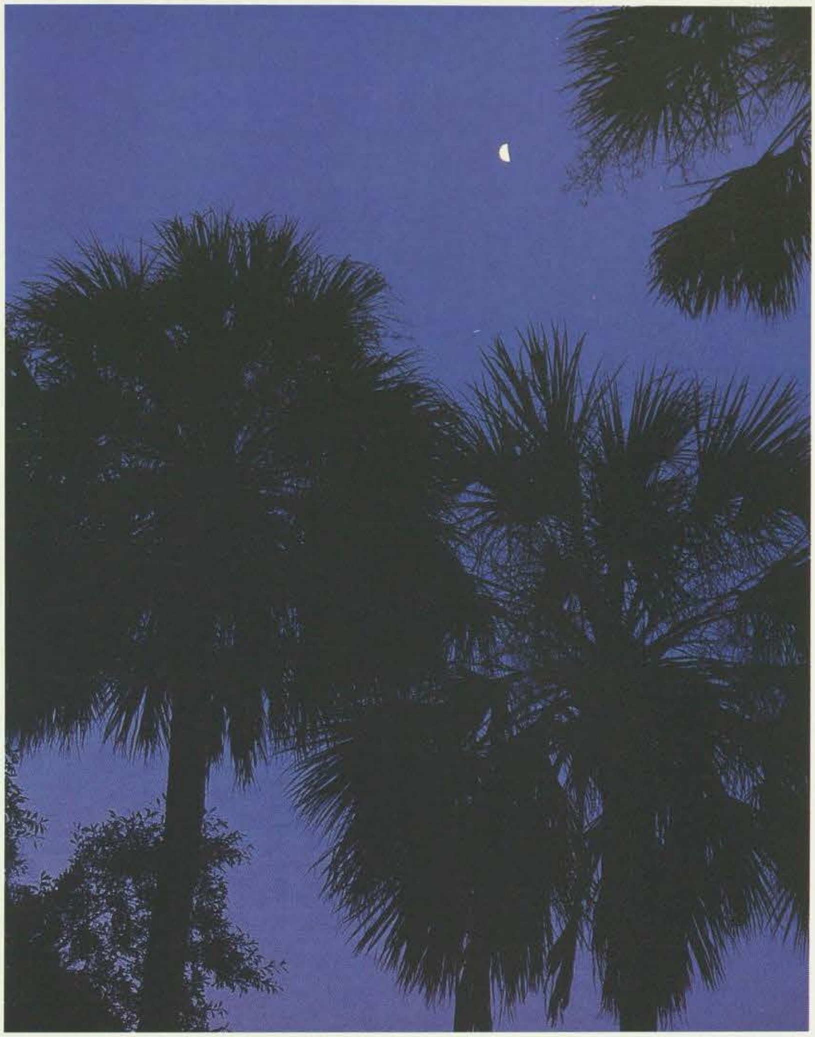


and small mammals like the golden mouse, will be the ones that suffer most as the cabbage palms die off," Ewel said.

Not every native tree might attract the attention of the scientific teams now working in Waccasassa Bay, but then the cabbage palm *is* the official state tree of Florida. It was so designated by the 1953 Legislature, beating out heavily lobbied for slash and longleaf pines and royal palms. In 1970, cabbage palm status further improved when it replaced the coconut palm on the state seal of Florida.

"The life-sustaining values of the cabbage palm still aren't fully documented and may never be," said number-one fan Robson. "But surely we know enough to give this tree the respect and protection it deserves."

Susan Cerulean is a biologist, free-lance consultant and former section supervisor for the Commission's Nongame Wildlife Program.



PAGE 37 PHOTOS BY JAN KNOBLOCK

One of about a dozen palm species native to Florida, the cabbage palm is more closely related to grasses than to pine or oak trees. Also known as the sabal palm, the cabbage palm ranges from St. Andrews Bay in the panhandle to the Keys.

Delicate Balance

Sherman's Fox Squirrel (*Sciurus niger shermani*)
Florida Status: Species of Special Concern
Federal Status: Candidate for listing

Certain of Florida's species classified as endangered, threatened or of special concern require pretty imaginative marketing to obtain public support, especially those that slither, creep or crawl for their living.

Not so the Sherman's fox squirrel. This hefty fellow is strikingly colorful, ecologically fascinating — and almost out of places to live.

It's likely that the only reason fox squirrels aren't widely appreciated by the general populace is that very few people have ever seen one. Although fox squirrels are distributed in 65 of the state's 67 counties, they presently occur predominantly in small, isolated populations, usually far from the usual human haunts. Then again, fox squirrels have been documented in golf courses and rural subdivisions.

The Sherman's fox squirrel, one of three Florida subspecies of the fox squirrel, lives in peninsular Florida west to Okaloosa County and is listed as a species of special concern. Unlike the threatened Big Cypress subspecies, the Sherman's fox squirrel may still be legally hunted on privately owned land in Florida.

Fox squirrels are much, much rarer than the gray squirrels that occur in every suburban yard. Weighing 2 to 2½ pounds, they are longer and heavier than their gray cousins. Although peninsular populations can be beige in color, Sherman's fox squirrels typically are colored black or dark gray, with white muzzles and ear patches and larger, fluffier tails. It is habitat preference (requirement, actually) that has allowed gray squirrels to prosper and fox squirrels to decline in Florida.

Mature, open pine flatwoods and open pine-oak forests, especially turkey oak/longleaf pine, historically provided natural nest cavities and preferred foods for the fox squirrel. But the fox squirrel's forests have disappeared at a staggering rate in Florida. A 1987 inventory of the state's forests reported an 88-percent reduction in longleaf pine acreage since 1936. Forest fragmentation and fire exclusion have significantly degraded what's left, leading one researcher to suggest that the habitat in which the eastern fox squirrel evolved may have already disappeared.

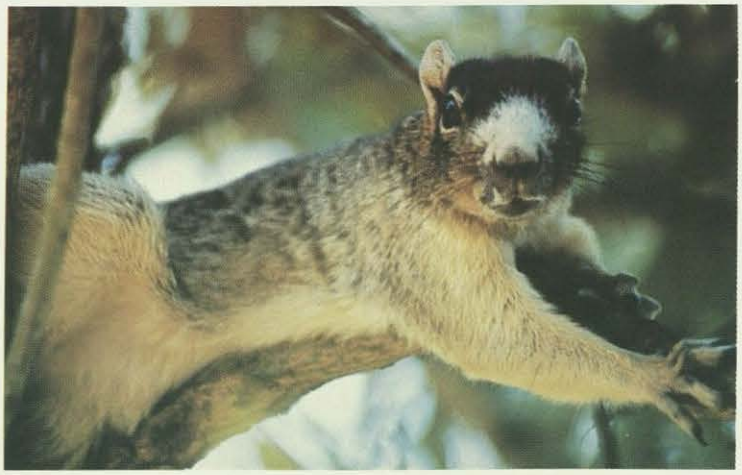
What do we lose with the decline of the fox squirrel and its longleaf pine woods? For one thing, we lose a chance to study some fascinating ecological interactions.

Scientists have learned that the fox squirrel is superbly adapted to exploit the spectacular energy package of longleaf pine cones. These huge cones can be used only by an animal that can handle and transport the cone's bulky weight and chew off the thick, fibrous bracts to reach the seeds within. That's not too difficult a task for the Sherman's fox squirrel.

Researchers believe fox squirrels may provide a service to the pine as well. Certain forest fungi promote vigorous growth among longleaf pine seedlings by increasing the absorption capabilities of the tree's roots. However, both tree and fungi are stationary and require an intermediary to bring them together. The fox squirrel, as it moves about the forest floor, feeds on those same fungi, then deposits the fungi's indigestible spores where they are accessible to longleaf pine roots.

Fans of the fox squirrel must help accelerate public land acquisition and management if this animal and its forests are to have a place in Florida's future.

— Susan Cerulean



JOHN WOODING

Check Stations

An Essential Part of Deer Management

By Mary M. Davis

Sportsmen who hunt Florida's Type I wildlife management areas know the routine — if the area has a manned check station, game must be taken there to be logged as part of the season's harvest. If the area has an unmanned check station, hunters are required to record their take on a survey card and place it in a collection box.

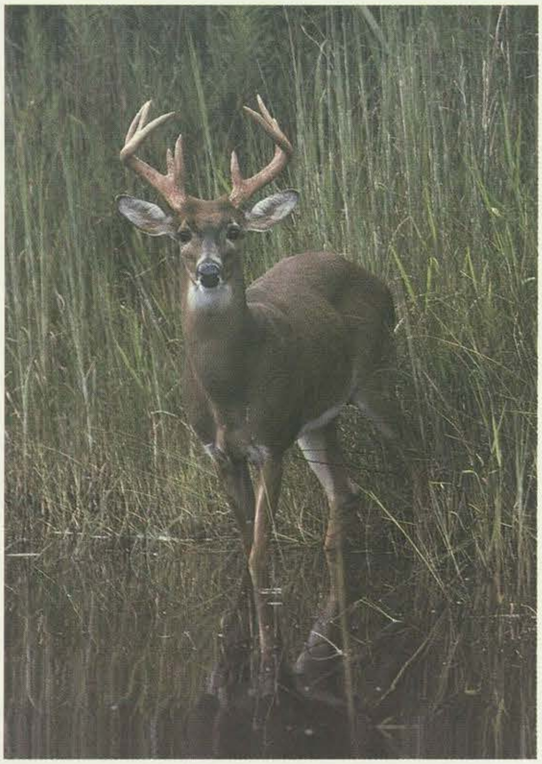
But Florida Game and Fresh Water Fish Commission wildlife biologists, and the seasonal check station operators they train, do more than merely count the number of white-tailed deer, turkeys, wild hogs, squirrels, quail, ducks and other game taken from Florida's 74 wildlife management areas.

Don Francis, game biologist for north Florida's Joe Budd, Talquin and Ochlockonee River WMAs, likens check station operations to the TV show "Quincy," a drama about a big-city medical examiner who determines the facts surrounding human deaths.

"When Quincy does an autopsy, the body tells him what happened," Francis said. "We wildlife managers let the hunters' harvest tell us about game populations."

The Commission estimates that more than 80 percent of sportsmen seek white-tailed deer when they hunt in Florida. Biologists find the information gathered at check stations particularly useful for deer management.

"We learn what diseases are present and prevalent, whether food is plentiful or if the land has reached its capacity, and when the 'rut' or breeding season takes place," Francis said. "We also glean reliable data regarding hunter effort and harvest."


WILLIAM J. WEBER

Carlton Chappell, wildlife management area coordinator for the Commission's Division of Wildlife, stressed that determining the next season's harvest goal of bucks and does isn't easy.

"We take check station data and correlate it with various survey data, our first-hand knowledge of white-tailed deer populations in Florida, habitat quality, land use and other information to get the big picture. We begin to make our management decisions from there," Chappell said.

Just what does the Commission do with the white-tailed deer that hunters bring to check stations, and why is it critical to successful management? Francis invited me to visit the Joe Budd WMA check station during opening weekend of the 1991 muzzleloading gun season to find out. He and Commission wildlife technician Richard Etters are responsible for day-to-day game management activities at Joe Budd.

My day began early. Hunters randomly selected for the Joe Budd WMA special muzzleloader quota hunt began arriving at the check station before dawn to pick up their zone tags and enter the area. They came from all over Florida, since public hunting lands are more plentiful in north and central Florida and because Joe Budd WMA has a reputation for quality deer hunting.

"The quota system enables us to limit the number of hunters in the wildlife management area. Zone tags give biologists further control over where people hunt in that area," Francis explained, as we waited for hunters to return. "Joe Budd is one of the most intensively managed wildlife management areas in the state, and quota permits and zone tags are part of that management effort."

The first successful hunter returned to the check station about 9:30 a.m. The south Florida man had taken a fine buck —his first deer ever — in Zone D. ▷

Understandably, he was reluctant to allow Francis to examine the deer.

"I want to get it mounted. You won't mess him up, will you?" the hunter asked, hesitantly.

"A taxidermist doesn't use the actual jaw bone in a mount," Francis explained. "I promise, your deer will still make good eating and a good trophy when we're done."

Francis and the check station operator went to work.

"Five points," Francis commented about the rack, as the check station operator took notes.

"It's a six-point buck, see!" the hunter interjected, lifting the buck's head.

Francis explained that, to biologists, an antler projection isn't a true point unless it is at least 1 inch in length. One of the six projections was merely a nub.

After noting the deer's weight and sex, Francis opened the animal's mouth, clipped loose one of the lower jaw bones and inserted a device called a jaw-puller to remove the bone from the carcass.

Before this tool was developed, we had to cut the skin to remove the jaw bone, and that marred the deer that hunters wanted to mount," he said. "Hunters are a lot more cooperative now that we use jaw-pullers."

Using the Severinghaus method of aging deer, he examined the jaw bone and told the hunter that his buck was in the 2.5 age-class. The Severinghaus system is based on tooth replacement and wear. The buck's jaw showed the third premolar to be a bicuspid.

"If a deer has this bicuspid," Francis said, gesturing, "it's over 18 months. If there's a tricuspid here, then it's 18 months or younger. After 18 months, it's more subjective, but we can get a good age estimate based on molar wear."

Biologists record the ages of deer taken because the data provide a glimpse into the age structure of the deer population.

"We have to presume that deer are taken roughly in proportion to their representation in the population," he said. "If mostly young deer are taken, biologists believe that the population is heavily hunted and consists primarily of young animals. To manage for trophy bucks, we'd want to maximize the older age classes of bucks. That means shortening seasons and tightening bag limits."

Although they normally don't do so at that time of year, Francis, with the hunter's permission, gutted the deer to give me a first-hand look at the procedure.

The hunter was more than willing to have Francis do the dirty work for him. Together, they moved the deer to a concrete slab next to the check station hut. Francis obviously had done this many times before — within seconds the deer lay gutted, his abdominal cavity cleared of the bladder and intestines.

"We're looking for parasites in these organs," Francis said as he methodically sliced the liver, then the lungs. "The higher the parasite load, the lower we presume the overall health of the deer population to be."

CARLTON CHAPPELL

The liver was free of flukes and the lungs free of worms. Francis moved on to the kidneys.

"We look at how much fat surrounds the kidneys and grade it on a scale of zero to four," he said. Francis graded this buck's kidney-fat index at one.

"Generally, the higher the number, the better, but an index of one at this time of year is nothing to be alarmed about," he said. "We find a lower kidney fat index when bucks are engaged in the rut since searching for a mate — not feeding — is their primary focus."

Francis moved to the stomach — or stomachs, I should say. "Deer are ruminants, like cows," he explained. "They have four stomachs — the first uses bacteria to digest cellulose from the woody plants they eat. Deer chew their cud, or bring food back up to chew some more, just like cows."

The second and third stomachs break down food even further, to aid in the absorption of nutrients and digestion.

Francis was interested only in the contents of the fourth stomach, called the abomasum — the animal's "true stomach."

"We take the contents of the abomasum back to the lab for examination," Francis said, slicing the organ expertly. "It takes about four hours to

(above) Changes in habitat conditions and food availability can cause deer to become stressed. (below) It takes four hours to examine the stomach contents from just one deer.

CARLTON CHAPPELL

Biologists can determine the health of a deer herd by measuring and examining harvested deer at a check station.

examine the stomach contents from just one deer, which is why we are selective about where and when we do this test."

Biologists conduct abomasum parasite counts (APCs) by diluting the contents of the fourth stomach and running the fluid through a very fine screen. Then, they study the matter from the screen under a microscope, identifying and counting various parasites.

"Nearly all deer will have at least some parasites in their abomasum, so we compare the count to an index scale developed by the Southeastern Cooperative Wildlife Disease Study group," he said. The researchers and veterinarians, headquartered at the University of Georgia, found that when the deer food supply was low, the abomasal parasite numbers increased, and when the food supply was high, parasite numbers were low.

Generally, biologists consider a deer herd healthy and below the carrying capacity of the land if the average APC index is below 500. When the index is between 500 and 1,500, the deer herd is considered healthy, but the land is most likely at its carrying capacity and should not be subjected to an increased deer population. An APC over 1,500 indicates the deer herd is stressed for some reason, probably because the population exceeds the carrying capacity of the land.

"This is a complicated index to use because parasite load can vary with the season. Land conditions change. Plus, the deer herd could be stressed for a reason other than the land having reached its maximum deer density," Francis explained.

"With only a couple of exceptions, the APC of deer in the Joe Budd WMA has been below 600 for the past seven years because we strictly manage the deer population to keep it below maximum levels," he said.

Likewise, south Florida wildlife managers report that APCs may rise in some deer populations in the Everglades.

Statewide WMA coordinator Chappell said, "Deer in south Florida become stressed due to rapid changes in habitat conditions and availability of food. Very heavy rains can cause a rapid rise in water levels after low water periods have allowed the deer herd to increase in numbers. High water limits the amount of food available and the deer's ability to reach it, stressing the herd."

When the Commission authorizes the taking of female deer, check station operators remove the does' reproductive tracts for study.

"Does taken after Feb. 1 in northwest Florida usually will be pregnant, with either one or two embryos," Francis said. In previous studies, biologists aged embryos and determined that the breeding season for deer in the Joe Budd WMA peaks in mid-January.

"By examining deer embryos, we determine the birth rate for deer on the area and can glean more data relating to whether the carrying capacity of the land has been reached," Francis said.

"For instance, if we examine 20 pregnant does and 10 of them are carrying twins, we've got 30 fetuses. We then estimate that there are 1.5 fawns for every pregnant doe on the area. Depending on what our management goals are, we can set the ideal doe harvest."

A low fawn-to-doe ratio sometimes indicates that there are too many deer, since only does in good health will bear a fetus, much less twins, he explained.

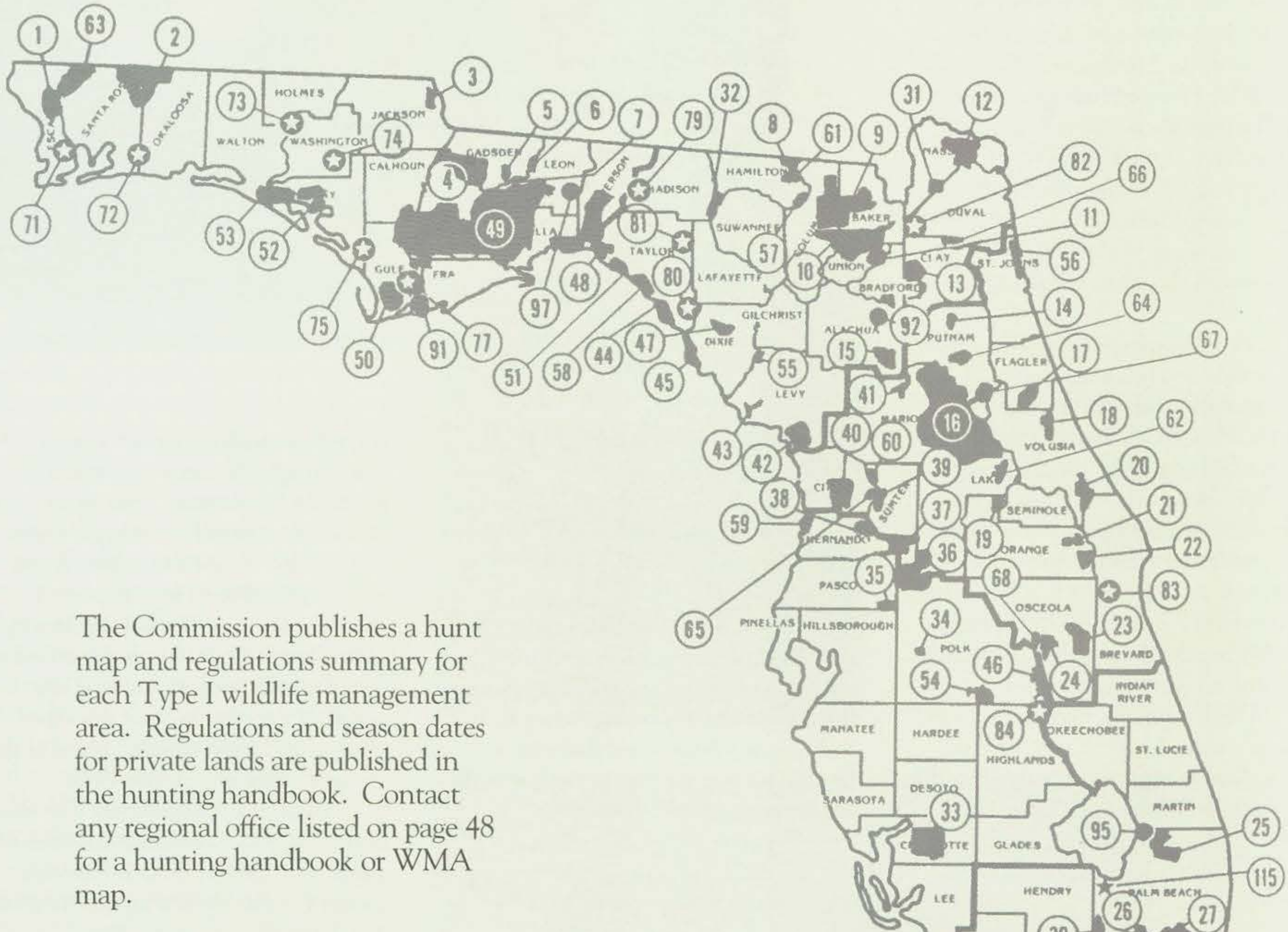
In addition, the check station operator notes anything unusual about deer taken on the area, such as infections and abnormalities. For instance, sloughing hooves can indicate an outbreak of hemorrhagic disease, a viral infection spread by "no-see-ums" (biting midges). In its acute phase, hemorrhagic disease can kill deer in just a few days. When chronic, the disease manifests itself through sloughing hooves, debilitating abrasions on the brisket and a smoothing of the usually irregular lining of the rumen. Deer often recover from the chronic stage, but remain carriers of the disease for the rest of their lives.

Biological administrator Tim Breault supervises and coordinates activities of game biologists in the Commission's Northwest Region and reports their efforts to Chappell.

"White-tailed deer management in Florida is different than most states because we have generally poor habitat throughout," Breault said. "Our soil is sandy, compared to the high-quality soils and woodlands in northern states. This makes interpreting the data even more challenging. Wildlife management in Florida, and the Southeast, definitely isn't 'by the book.' That's why what we learn through our check stations is so vital."

Mary M. Davis, a former public information specialist for the Commission, now works with a Tallahassee public relations firm.

Commission-Managed Lands For Public Hunting



The Commission publishes a hunt map and regulations summary for each Type I wildlife management area. Regulations and season dates for private lands are published in the hunting handbook. Contact any regional office listed on page 48 for a hunting handbook or WMA map.

[**Editor's note**: Since this map and chart were prepared, two new areas have joined the Type I Wildlife Management Area Program: Holton Creek in Hamilton County and Steinhatchee Springs in LaFayette County.]

TYPE I WILDLIFE MANAGEMENT AREAS

(Do not use these numbers as choice numbers on quota hunt applications.)

	*** See Ownership Legend**		**Acres**
1.	P	Champion International	(21,078)
2.	TP	Blackwater	(186,395)
3.	F	Apalachee	(7,952)
4.	P	Robert Brent	(79,979)
5.	TC	Joe Budd	(8,415)
6.	T	Ochlockonee River	(2,790)
7.	T	Talquin	(2,993)
8.	PW	Cypress Creek	(20,149)
9.	F	Osceola	(186,926)
10.	P	Lake Butler	(88,878)
11.	T	Raiford	(16,200)
12.	P	Nassau	(40,160)
13.	T	Camp Blanding	(62,340)
14.	P	Georgia-Pacific	(10,122)
15.	P	Lochloosa	(31,751)
16.	F	Ocala	(380,089)
17.	P	Relay	(25,463)
18.	T	Tiger Bay	(6,745)
19.	T	Rock Springs Run	(12,100)
20.	P	Farmton	(52,170)
21.	W	Seminole Ranch	(6,000)
22.	T	Tosohatchee	(28,000)
23.	W	Bull Creek	(22,206)
24.	T	Three Lakes	(45,303)
25.	C	J.W. Corbett	(57,892)
26.	T	Holey Land	(35,350)
27.	T	Brown's Farm	(4,460)
28.	TW	Everglades	(671,831)
29.	F	Big Cypress	(565,848)
30.	T	Rotenberger	(27,810)
31.	T	Cary	(3,372)
32.	W	Twin Rivers	(9,250)
33.	C	Cecil M. Webb	(65,770)
34.	P	IMC	(720)

	*** See Ownership Legend**		**Acres**
35.	W	Upper Hillsborough	(5,178)
36.	W	Green Swamp	(48,488)
37.	T	Richloam	(55,920)
38.	T	Croom	(20,555)
39.	T	Jumper Creek	(10,068)
40.	T	Citrus	(41,000)
41.	PT	Fort McCoy	(10,575)
42.	PT	Gulf Hammock	(24,685)
43.	T	Cedar Key Scrub	(4,000)
44.	T	Tide Swamp	(20,285)
45.	TP	Jena	(8,772)
46.	W	Kicco	(7,426)
47.	P	Steinhatchee	(29,841)
48.	TPF	Aucilla	(75,110)
49.	F	Apalachicola	(558,380)
50.	P	Edward Ball	(66,270)
51.	T	Hickory Mound	(14,221)
52.	TP	Moore's Pasture Unit	(42,810)
53.	P	Point Washington	(88,280)
54.	T	Arbuckle	(13,500)
55.	TW	Andrews	(3,880)
56.	T	Guana River	(9,815)
57.	WT	Big Shoals	(3,495)
58.	TP	Spring Creek	(14,899)
59.	TF	Chassahowitzka	(18,709)
60.	TW	Half Moon	(8,479)
61.	P	Occidental	(1,400)
62.	T	Seminole Forest	(6,100)
63.	P	Escambia River	(56,188)
64.	W	Caravelle Ranch	(5,270)
65.	W	Flying Eagle	(10,247)
66.	W	Jennings Forest	(13,522)
67.	W	Lake George	(11,474)
68.	T	Prairie Lakes	(8,203)

✪ TYPE II WILDLIFE MANAGEMENT AREAS

71.	W	Lower Escambia	(18,000)
72.	F	Eglin Air Force Base	(458,143)
73.	W	Choctawhatchee River	(35,198)
74.	P	Rosewood Timber	(22,291)
75.	F	Tyndall Air Force Base	(14,500)
77.	W	Apalachicola River	(35,509)
79.	W	Middle Aucilla River	(1,744)
80.	P	Procter & Gamble Cellulose Co.	(488,568)
81.	P	Champion International Corp.	(8,079)
82.	P	Gilman Paper Company	(57,425)
83.	W	Upper St. Johns	(89,000)
84.	F	Avon Park Air Force Base	(103,107)

• WILDLIFE AND ENVIRONMENTAL AREAS

91.	T	Apalachicola River	(46,992)
92.	W	Santa Fe Swamp	(5,492)
95.	W	DuPuis	(21,935)
96.	W	Southern Glades	(25,886)
97.	C	L. Kirk Edwards	(680)

★ OTHER AREAS MANAGED BY THE COMMISSION

115.	T	Lake Harbor Public Waterfowl Area	(638)

* OWNERSHIP LEGEND

T = Trustees
C = Commission
F = Federal
P = Private
W = Water Management District

It's The Law

By Inspector Kyle W. Hill

Question: Recently I saw a wildlife officer checking the exotic animals at a zoo. Is this a part of an officer's job?

Answer: Yes. The Commission is charged with regulating all wildlife exhibits in the state and also must regularly check pet shops, circuses, alligator farms, game farms, hunting preserves and importers of tropical fish and exotic animals. The Commission also has some of the most stringent regulations in the nation regarding captive animal care. Wildlife is big business in Florida, with over $100 million a year generated by sales and exhibitions. Approximately 8,000 Floridians possess wildlife for commercial or private use.

These inspections usually are not performed by wildlife officers, but by wildlife inspectors. Inspectors are degree-holding zoologists with law enforcement training and authority. Inspectors must seize thousands of illegally kept wildlife specimens each year and are experts in the use of tranquilizer equipment and zoo husbandry. They must capture escaped cobras, lions, monkeys, rhinos, buffalo, bears and a host of other non-native critters. All wildlife dealers must be licensed by the Commission, and persons possessing certain types of wildlife pets also must obtain permits.

For additional information on the Wildlife Inspections Program or captive animal regulations, contact the Commission's Division of Law Enforcement at (904) 488-6253.

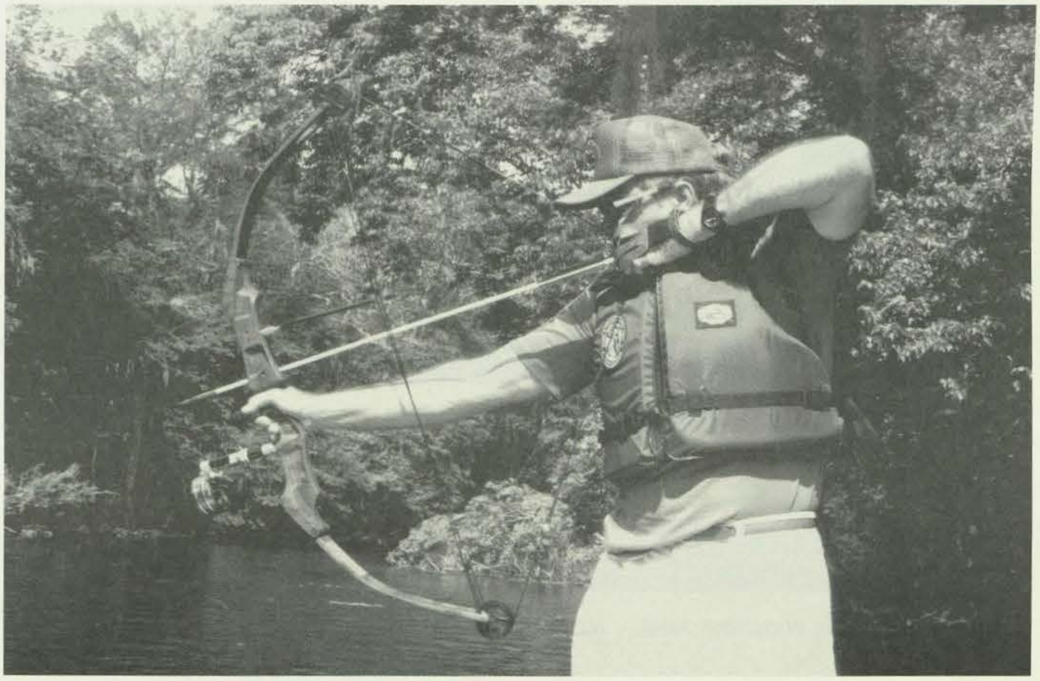
Question: Can you clarify the new archery regulations regarding the prohibited broadheads and sights?

Answer: One regulation that went into effect July 1 prohibits the use of certain sizes and types of broadheads for hunting deer, hog or turkey. Legal broadheads must have a fixed width of no less than $^7/_8$ inch and have at least two sharpened steel edges. This regulation is designed to eliminate the use of some of the new "expandable" broadheads. These have been found to be unreliable and could result in wounded game if they fail to open.

Another new regulation prohibits hunting during archery season with a bow equipped with laser sights or sights capable of electronically computing a target's range. Use of these modern adaptations is not prohibited, however, during general gun season. Pendulum sights, which use gravity to determine range, are still allowed under the new regulations.

There is also a prohibition on the use of a bow with a draw weight of less than 35 pounds.

These changes came as a result of input from the Florida Bowhunters Council. Their intent is to preserve the aesthetic nature and sport of archery season. For additional information on these changes or for clarifications, please call the nearest regional office of the Commission.



ED TYER

By Captain Ed Tyer

Hunting From A Perch

Using a tree stand to get above the underbrush and normal line of sight can enhance a hunter's chances of taking a deer. As hunting from tree stands becomes more popular, accidents involving tree stands become more frequent. A few common sense procedures could save your life.

Use a stand designed for your specific type of hunting. Some stands position the hunter facing the tree, while others elevate the hunter in a chair that swivels. Yet another supports the hunter in a reclining position — not the best way to shoot a bow. Never use a stand in a manner for which it was not designed.

Climbing stands let you move up, down and around the tree to obtain the best view of the area you're hunting. Their versatility make them popular, but can also present problems. Be careful to select the right tree — one that's fairly straight, free of limbs up to your hunting height and with bark the blades can grip securely. If you choose a tree with a large base that tapers quickly (such as a cypress) and adjust the stand for the base, the angle of the stand will change as you climb, perhaps to the point of collapsing. Climbing stands usually have two sections; a rope or strap attaching them together will provide a method of retrieving the lower section if it is dropped. Otherwise, you would be up the proverbial tree without a ladder.

Clamp-on stands generally are more stable than the climbers but provide no means of reaching the stand. This can pose a number of problems, from safety considerations to tree damage. Spikes or screw-in-type climbing devices can destroy the tree and your invitation to hunt on the property. Portable ladders or ropes and blocks are reasonable alternatives.

Ladder-type stands are popular because they are rather stable and not too high. When attached to the tree with straps or other bindings, the ladder stand offers a good perch to see over the palmettos. Many hunters have been injured when their ladder stands fell from not being properly secured to the tree. Attach the ladder at the bottom, middle and top, so it can't twist when you shift your weight.

Most tree stand accidents involve hunters falling from their perch. Almost without exception, a safety belt would have reduced the likelihood of these injuries. Attaching yourself to the tree to prevent falls is one of the simplest safety precautions you can take. If your portable stand didn't come with a safety belt, be sure to acquire one before using it.

Another way to improve your hunting safety is to pull your gun or bow up the tree with a rope. Unload your gun and attach the rope to the butt-stock. Never pull a gun toward you or pick one up by the muzzle. When you get settled in the stand and retrieve your gun, you may want to leave the rope attached to the gun and tied to the stand. Allow sufficient slack to be able to handle the gun, but keep it short enough so that it won't hit the ground if dropped. This may prevent you from being shot by your own gun. A firearm can discharge on impact with the ground.

A tree stand can be a terrific asset. But it's up to you to use it safely.

BILL BURGIN

A safety belt would add a measure of safety to this hunter's trip.

Conservation Update

Compiled by Scott Ball

VOLUNTEERS FIX UP YOUTH CAMP

Last November, the Commission's Everglades Youth Conservation Camp, near West Palm Beach, was in danger of closing. But thanks to an outpouring of public sentiment and the hard work and donations of hundreds of volunteers, it was business as usual this summer for the south-Florida camp.

The camp, built in the late-1960s, was in need of major renovations, and in a year of budget cuts, the money to upgrade the facility's sewer, roofs and electrical system was not available. When the Commission announced that it had no choice but to close the doors to this popular camp, concerned individuals came to the rescue. Dozens of phone calls and letters prompted the Commission to seek and obtain emergency appropriation to cover needed repairs.

A number of organizations and individuals donated money, time and labor to get the camp back in operation. Wildlife artist Susan Young painted a 7 x 34-foot mural on the wall of one of the buildings, making a powerful impact on visitors and campers as they first arrive.

At its July meeting, the Commission honored those whose efforts helped keep the Everglades Youth Conservation Camp open for hundreds of youngsters this summer. Those receiving special recognition included Johnny Jones of West Palm Beach, who coordinated the volunteer effort, Jimmy Compton and the Palm Beach County Airboat and Halftrack Club, the Airboat and Halftrack Club of Broward County, the African Safari Club of Florida, the Florida Sugar Cane League and the South Florida Water Management District.

DUCKS UNLIMITED HAS GOOD YEAR

Ducks Unlimited (DU), the international waterfowl conservation organization, enhanced a record 261,522 acres of North American habitat in 1991. In addition, another 267,779 acres were secured for future habitat development work.

At a meeting in Toronto, DU Executive Vice President Matthew B. Connolly Jr. said the organization played a key role in acquiring, restoring or protecting several major wetland ecosystems in California, Ohio, South Carolina Iowa and Saskatchewan. Other 1991 achievements included the impounding of more than 12,000 acres of water to provide wintering habitat for waterfowl in the Mississippi Delta.

Since its inception in 1937, DU has raised nearly $700 million on behalf of North American waterfowl and conserved over six million acres of habitat.

URBAN POND PROJECT WINS AWARD

The Game and Fresh Water Fish Commission's Jacksonville Urban Pond Project has been named 1991's Outstanding Federal Aid in Sport Fish Restoration Project.

The national award recognizes the Commission's joint efforts with the Jacksonville Parks and Recreation Department in creating freshwater sport fishing opportunities in nine man-made ponds where no such opportunities existed before. The project also included a program to teach children about their aquatic environment and the ethical use of aquatic resources.

The award is presented by the American Fisheries Society to recognize excellence in the use of Sport Fish Restoration funds collected from taxes and import duties on fishing tackle, motor boat fuels and yachts.

NEW AREA OPEN TO MOBILITY-IMPAIRED HUNTERS

The Game and Fresh Water Fish Commission recently established a new wildlife management area for the exclusive use of mobility-impaired hunters.

Holton Creek WMA is a 2,600-acre area on the Suwannee River, between Jasper and Live Oak in southwestern Hamilton County. Owned by the Suwannee River Water Management District, the area is a floodplain hammock that merges into uplands.

Holton Creek is the first wildlife management area where hunting-related activities will be offered for mobility-impaired sportsmen only. Maps and regulations are available from Commission regional offices.

REGISTER YOUR BAT ROOST

Got bats in your belfry? Or in your attic, tree cavity or nest box? The American Bat Conservation Society (ABCS) wants to know all about it.

Conservationists with the Maryland-based organization are conducting a survey to learn where North American bats spend their days. Interest in and appreciation for bats has increased in recent years, as reflected by sales of artificial bat roosts. The problem, according to ABCS president Dr. Tom Valega, is that there is little evidence that North American bats are using these boxes. "It just may be that today's roost boxes are not very attractive to bats," Valega said, "but we don't know why."

The group is seeking the cooperation of those who have bats roosting on their property or neighborhood. By completing the registration form, participants will convey valuable information to Valega's group. The survey requests information about the location and type of roost, height from the ground, direction it faces, proximity to water, pest control, etc.

To participate, send a self-addressed, stamped, business-size envelope to Bat Roost Registry, ABCS, PO Box 1393, Rockville, MD 20849.

NATIONAL HUNTING AND FISHING DAY

National Hunting and Fishing Day falls on Saturday, Sept. 26, and this year's theme emphasizes a one-on-one approach to introduce America's youth to their sporting heritage.

"Even Old Traditions Need New Beginnings...Start Tomorrow's Sportsmen Today" calls on individual sportsmen and sportsmen's clubs to plan special activities to introduce youngsters to the wise and ethical use of our natural resources.

"Every one of today's sportsmen owes a debt to the hunters and anglers who have gone before, especially the men and women who introduced us to the joys and wonders of the sportsman's world," said NHF Day National Coordinator Dave Howery. "This year we're encouraging sportsmen to repay that favor by passing on the sportsman's conservation heritage to America's next generation."

National Hunting and Fishing Day was created by congressional resolution in 1971 to honor sportsmen for historic and continuing contributions to wildlife conservation.

WHERE HAVE ALL THE FLOWERS GONE?

When he arrived in 1513, Ponce de Leon named our state for its abundance of flowers. But we are losing the essence of what gives Florida its name, according to a University of Florida botanist.

"Gone are the wildflowers that once dotted the state's roadsides, the multi-colored orchids that line the Everglades trails and the bright yellow flowers that thrived in north Florida's pine woods," said Daniel Ward, who studies the demise of Florida's flora. He blames pesticides, people and the spread of exotic plants.

Ward believes widespread pesticide use for mosquito control and agricultural purposes beginning in the 1960s caused the extinction of many plants.

"These flowering plants died because they could no longer be pollinated or reproduce, once these insects were destroyed," he said. Other plants have been exterminated by people picking their flowers, which destroys the plant's ability to reproduce. Others have been crowded out by exotic plants or destroyed by exotic insects.

"In revisiting the places where I collected plants 20 years ago, I see the grasses, the sedges and the rushes," Ward said. "But I can't find the lobelias, orchids or gentians."

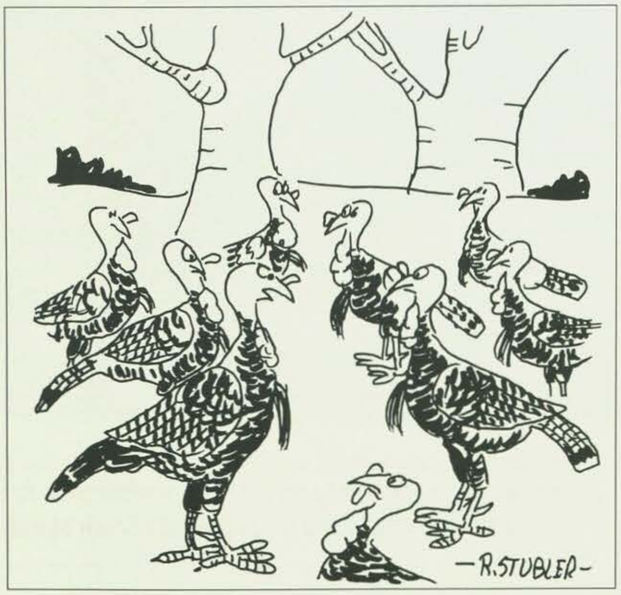
PACK IT WITH WOOD CURLS

A University of Georgia professor has developed a machine to cut wood curls for use as a better packing material than popcorn or foam peanuts.

"Unlike foam peanuts, wood curls are biodegradable, and people don't have to throw them away," said Jim Rice, the machine's inventor. "They can be used as mulch around plants or as pet litter."

Some companies have used popcorn as an alternative, but popcorn can attract bugs, and spraying it with insecticides is dangerous to unknowing people who might eat it after unpacking.

Rice came upon his idea while developing a machine to shave wood for use in fragrant potpourri. He believes his machine can manufacture resilient wood curls from scrap wood and compete with the price of foam peanuts. Although the wood curls weigh up to two-thirds more per cubic foot than foam peanuts, Rice said the difference would have little effect on shipping costs.



Hey, wait a minute – we all can't be named Tom.

Report Wildlife Law Violators and Polluters!

CALL TOLL FREE

Panama City:	1-800-342-1676
Lake City:	1-800-342-8105
Ocala:	1-800-342-9620
Lakeland:	1-800-282-8002
West Palm Beach:	1-800-432-2046

REGIONAL OFFICES

Florida Game & Fresh Water Fish Commission

Northwest Region
3911 Hwy. 2321
Panama City, FL 32409-1658
Telephone: (904) 265-3676

Northeast Region
Route 7, Box 440
Lake City, FL 32055-8713
Telephone: (904) 758-0525

Central Region
1239 S.W. 10th Street
Ocala, FL 32674-2723
Telephone: (904) 732-1225

South Region
3900 Drane Field Road
Lakeland, FL 33811-1299
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Floridana

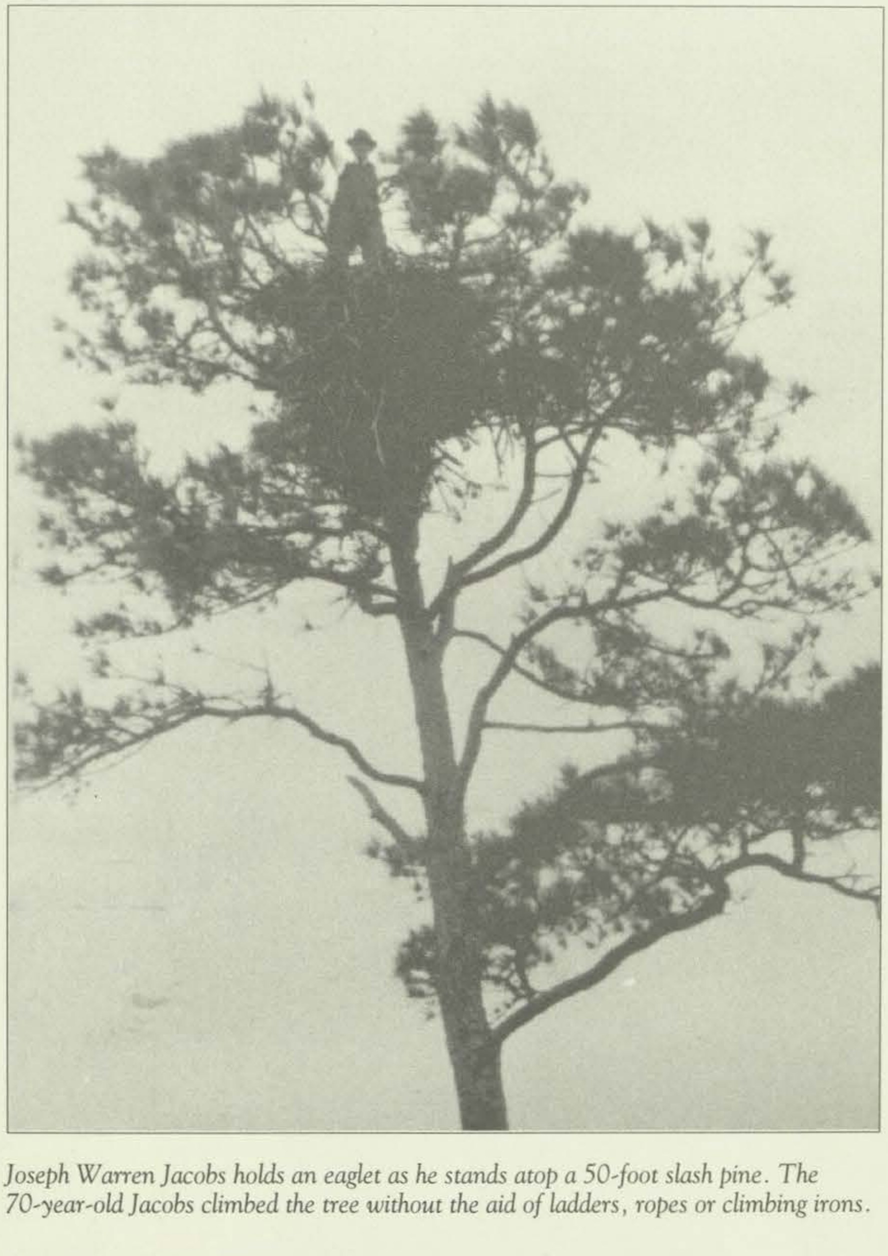
At the turn of the century Joseph Warren Jacobs transformed his ornithological studies into one of America's first mail-order birdhouse businesses (see story on pages 2-5).

One of Jacobs' sons, William, was active with the Florida Forestry Department during the 1930s and 1940s. The elder Jacobs made several trips to visit his son in Tallahassee and spent part of his time getting personally acquainted with Southerners he had corresponded with over the years.

In November 1939, Jacobs, 70, and another son, Harold, visited a bald eagle's nest on a small island in the Gulf of Mexico. The nest was atop a 50-foot slash pine; the lowest branch was 25 feet up. Jacobs and his son surveyed the situation along with their guide, ornithologist R.C. Hallman. Jacobs never had been much for using climbing irons, and he often did his climbing with just his hands, legs and feet. That day was no exception, and his two companions looked on in disbelief as this 70-year-old man shinnied up the trunk to the first branch and then made his way to the nest. He found three eaglets in the nest, which he carefully examined before climbing back down. (The federal Endangered Species Act now prohibits such activities by unauthorized persons.)

Eagles were especially rare in that part of the state at the time. Today, researchers verify that 5 percent of Florida's eagles occur in northwest Florida.

— D. Kent Fonner



Joseph Warren Jacobs holds an eaglet as he stands atop a 50-foot slash pine. The 70-year-old Jacobs climbed the tree without the aid of ladders, ropes or climbing irons.